WK 2-TC

** JOB STATUS REPORT AS OF JUN 28 02 16:09 PAGE. 01

MDEQ-CADILLAC

JOB #338

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	STATUS
001	6/28	16:08	DEQ:SWQD:COMP ENF	UF--S	00'23"	003	OK

Michigan Department of Environmental Quality
Cadillac District Office
Surface Water Quality Division
120 W. Chapin Street
Cadillac, Michigan 49601-2158

Telephone: 231-775-3960
Facsimile: 231-775-1511

FACSIMILE COVER SHEET

TO: Janna Sebald

COMPANY: SWQD Enforcement Unit

FAX NO: 517-373-2040

FROM: Sy Paulik

EXTENSION: ~~670~~ 6267

DATE: 06/28/02

03
NO. OF PAGES INCLUDING COVER SHEET

COMMENTS:

2 OMI Invoices

Janna - for WR+S
Sending again because it looks like all pages did not go thru. -JSd

WK Dry GT Co.

OMI

Traverse City Office:
606 Franklin Street
Traverse City, MI 49684
Mailing Address:
P.O. Box 6350
Traverse City, MI 49696
Tel 616 922-4921
Fax 616 922-8170

INVOICE

MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac, MI 49601-2158

Date: Apr. 4, 2002
Project No. Williamsburg
Invoice No. MD002-01

Attn: Sy Paulik

RECEIVED
APR - 9 2002
SURFACE WATER QUALITY DIVISION
CADILLAC DISTRICT OFFICE

This invoice is for laboratory analysis performed.

Sample Identification: Williamsburg samples

(1) BOD analysis @ $20.00	$20.00
(1) TSS analysis @ $10.00	$10.00
(1) Chloride analysis @ $15.00	$15.00
SUBTOTAL	**$ 45.00**
TOTAL AMOUNT DUE	**$ 45.00**

To Nancy 04/10/02 - jcd

Due and Payable Upon Receipt

Please send your remittance to:

Operations Management International, Inc.
606 Franklin Street
Traverse City, MI 49686

INDEX 37900
PCA 40530 PROJECT 480043
REC'D/APPROVED Michael Stefl

WKS
GT CO

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
CADILLAC DISTRICT OFFICE

JOHN ENGLER
GOVERNOR

RUSSELL J. HARDING
DIRECTOR

June 27, 2002

FILE

Mr. Chris Hubbell
Williamsburg Receiving & Storage
10190 Munro Road
Williamsburg, MI 49690

Dear Mr. Hubbell:

SUBJECT: Results of Samples Taken From the Ditch along Munro Road

Enclosed are the laboratory results of samples taken from the road ditch along Munro Road. These sample results show a much higher strength of BOD (biochemical oxygen demand) than standard storm water flows.

Please feel free to contact me if you have any questions.

Sincerely,

Sy V. Paulik
Surface Water Quality Division
Cadillac District Office
231-775-3960, Extension 6267

Enclosure

cc/enc: Whitewater Township
Mr. Joe Quandt, Menmuir, Zimmerman, Kuhn, Taylor and Quandt, PLC
Mr. Rick Rusz, DEQ, WMD-Lansing
Ms. Janice Heuer, DEQ, WMD-Cadillac
Ms. Janna Sebald, DEQ, SWQD-Lansing

OMI, Inc.
606 Franklin Street
Traverse City, MI 49686
Tel 231 922.4922
Fax 231 992.8170

OMI

May 20, 2002

Sy Paulik
MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

Dear Sy:

Enclosed please find the results for your water samples. Analyses were performed according to the "Standard Methods for Examination of Water and Wastewater," 18th Edition.

If you have any questions concerning this result, please feel free to contact our laboratory by phoning (231) 922-4922.

Sincerely,

Liz Hart
Lab Analyst

mf

Enclosure: Lab Report, Invoice

OPERATIONS MANAGEMENT INTERNATIONAL
TRAVERSE CITY WASTEWATER TREATMENT PLANT

ANALYTICAL LABORATORY REPORT

CLIENT: MDEQ **REPORT DATE:** May 20, 2002

ADDRESS: Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

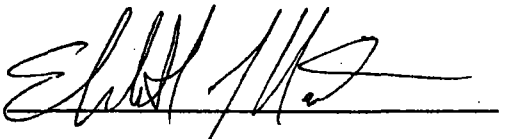
PROJECT: Williamsburg Results

Sample ID	Sample Date	Analysis Date	Analysis	Units	Result
Ditch across from house*	4/18/02	4/23/02	BOD	mg/L	13.6
Ditch across from house	4/18/02	4/25/02	Chloride	mg/L	11.0
Ditch across from house	4/18/02	4/25/02	Nitrate	mg/L	ND
Boals Ditch*	4/18/02	4/23/02	BOD	mg/L	35.0
Boals Ditch	4/18/02	4/25/02	Chloride	mg/L	13.0
Boals Ditch	4/18/02	4/25/02	Nitrate	mg/L	ND
Ditch across from Rental	4/21/02	4/23/02	BOD	mg/L	>250
Ditch across from Rental	4/21/02	4/25/02	Chloride	mg/L	433
Ditch across from Rental	4/21/02	4/25/02	Nitrate	mg/L	2.53
Field Storm Runoff	4/22/02	4/23/02	BOD	mg/L	>250
Field Storm Runoff	4/22/02	4/25/02	Chloride	mg/L	7.0
Field Storm Runoff	4/22/02	4/25/02	Nitrate	mg/L	.260
Williamsburg AP1*	4/27/02	4/30/02	BOD	mg/L	>250
Williamsburg AP2*	4/27/02	4/30/02	BOD	mg/L	>250
Williamsburg AP3*	4/27/02	4/30/02	BOD	mg/L	>250
Williamsburg AP1	4/27/02	4/30/02	Conductivity	Us/cm	341
Williamsburg AP2	4/27/02	4/30/02	Conductivity	Us/cm	365
Williamsburg AP3	4/27/02	4/30/02	Conductivity	Us/cm	281

Signature, Lab Analyst

Sample ID	Sample Date	Analysis Date	Analysis	Units	Result
Williamsburg R&S	5/2/02	5/3/02	BOD	mg/L	27.4
Williamsburg R&S	5/2/02	5/3/02	TSS	mg/L	42.1
Williamsburg R&S	5/2/02	5/3/02	NH3	mg/L	.098
Williamsburg R&S	5/2/02	5/6/02	Nitrate	mg/L	<.25
Williamsburg R&S	5/2/02	5/7/02	Chloride	mg/L	5.0
MDEQ	5/12/02	5/14/02	BOD	mg/L	54.6
MDEQ	5/12/02	5/14/02	TSS	mg/L	60.3

*Set after holding time



Signature, Lab Analyst

WKS GT Co

OMI, Inc.
606 Franklin Street
Traverse City, MI 49686
Tel 231 922.4922
Fax 231 992.8170

OMI

May 20, 2002

Sy Paulik
MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

Dear Sy:

Enclosed please find the results for your water samples. Analyses were performed according to the "Standard Methods for Examination of Water and Wastewater," 18th Edition.

If you have any questions concerning this result, please feel free to contact our laboratory by phoning (231) 922-4922.

Sincerely,

Liz Hart
Lab Analyst

mf

Enclosure: Lab Report, Invoice

OPERATIONS MANAGEMENT INTERNATIONAL
TRAVERSE CITY WASTEWATER TREATMENT PLANT

ANALYTICAL LABORATORY REPORT

CLIENT: MDEQ **REPORT DATE:** May 20, 2002

ADDRESS: Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

PROJECT: Williamsburg Results

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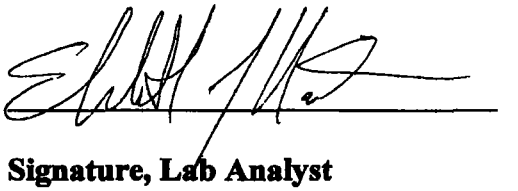
Boals Ditch	4/18/02	4/25/02	Chloride	mg/L	13.0
Boals Ditch	4/18/02	4/25/02	Nitrate	mg/L	ND
Ditch across from Rental	4/21/02	4/23/02	BOD	mg/L	>250
Ditch across from Rental	4/21/02	4/25/02	Chloride	mg/L	433
Ditch across from Rental	4/21/02	4/25/02	Nitrate	mg/L	2.53
Field Storm Runoff	4/22/02	4/23/02	BOD	mg/L	>250
Field Storm Runoff	4/22/02	4/25/02	Chloride	mg/L	7.0
Field Storm Runoff	4/22/02	4/25/02	Nitrate	mg/L	.260
Williamsburg AP1*	4/27/02	4/30/02	BOD	mg/L	>250
Williamsburg AP2*	4/27/02	4/30/02	BOD	mg/L	>250
Williamsburg AP3*	4/27/02	4/30/02	BOD	mg/L	>250
Williamsburg AP1	4/27/02	4/30/02	Conductivity	Us/cm	341
Williamsburg AP2	4/27/02	4/30/02	Conductivity	Us/cm	365
Williamsburg AP3	4/27/02	4/30/02	Conductivity	Us/cm	281

Signature, Lab Analyst

Sample ID	Sample Date	Analysis Date	Analysis	Units	Result
Williamsburg R&S	5/2/02	5/3/02	BOD	mg/L	27.4
Williamsburg R&S	5/2/02	5/3/02	TSS	mg/L	42.1
Williamsburg R&S	5/2/02	5/3/02	NH3	mg/L	.098
Williamsburg R&S	5/2/02	5/6/02	Nitrate	mg/L	<.25
Williamsburg R&S	5/2/02	5/7/02	Chloride	mg/L	5.0
MDEQ	5/12/02	5/14/02	BOD	mg/L	54.6
MDEQ	5/12/02	5/14/02	TSS	mg/L	60.3

*Set after holding time



Signature, Lab Analyst

WR & S
GTCO

OMI, Inc.
606 Franklin Street
Traverse City, MI 49686
Tel 231 922.4922
Fax 231 992.8170

OMI

INVOICE

MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac, MI 49601-2158

Date: May 20, 2002
Project No. Williamsburg
Invoice No. MD002-02

Attn: Sy Paulik

This invoice is for laboratory analysis performed.

Sample Identification: Williamsburg samples April and May 2002

(9) BOD analysis @ $20.00	$180.00
(2) TSS analysis @ $10.00	$20.00
(5) Chloride analysis @ $15.00	$75.00
(5) Nitrate analysis @ $12.00	$60.00
(1) NH3 analysis @ $10.00	$10.00
(3) Conductivity analysis @ $8.00	$24.00
SUBTOTAL	**$ 369.00**
TOTAL AMOUNT DUE	**$ 369.00**

Due and Payable Upon Receipt

Please send your remittance to:

Operations Management International, Inc.
606 Franklin Street
Traverse City, MI 49686

INDEX 37900
PCA 40530 PROJECT 48004
REC'D/APPROVED

WKS
Rec'd 5/10/02

OPERATIONS MANAGEMENT INTERNATIONAL
TRAVERSE CITY WASTEWATER TREATMENT PLANT

ANALYTICAL LABORATORY REPORT

CLIENT: MDEQ **REPORT DATE:** April 10 2002

ADDRESS: Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

PROJECT: Williamsburg Results

Williamsburg

Sample ID	Sample Date	Analysis Date	Analysis	Units	Result	
MDEQ	4-27-02	4-30-02	BOD	mg/l	>250	AP1
MDEQ					>250	AP2 (red dye)
MDEQ	↓	↓	↓		>250	AP3
↓	5-2-02	5-3-02	NH3		.098	
			TSS		42.1	
		↓	BOD		27.4	
		5-6-02	nitrate		1.25	
↓	↓	5-7-02	Chloride	↓	5.0	

Newest INFO

Signature, Lab Analyst

QUICK FAX OfficeMax

Date: 5-10-02	# Of Pages:
To: Sy Pavlith	From: Liz Hart
Co./Dept.: Service Water Quality	Co./Dept.: LaD
Fax: 231-775-1514	Fax: (231) 922-8170
Phone:	Phone: 231 922-4921
Note:	E-Mail:

1

WRS
GTCo

SOS ANALYTICAL
3188 Lafranier Road
Traverse City, MI 49686
Phone 231-946-4767
Fax 231-946-8741
www.sosanalytical.com

COMPANY: OMI
NAME:
PROJECT NO: TCWWTP
WSSN:
WELL PERMIT:
TAX ID:
LOCATION:

MI
COUNTY:
TWP:

SOS PROJECT NO: 021115
SAMPLED BY: LIZ HART/OMI

DATE SAMPLED: 4/18/02
TIME SAMPLED:
SAMPLE MATRIX: GRAB/WATER
DATE RECEIVED: 4/22/02
TIME RECEIVED: 3:10 PM

INORGANICS

No:	Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
SAMPLE ID: DRAIN ACROSS FROM HOUSE							
1	CHLORIDE EPA 325.2	11	2	mg/L (PPM)	KMC	4/25/02	
1	NITROGEN, NITRATE - EPA 353.2	ND	0.15	mg/L (PPM)	KMC	4/24/02	
SAMPLE ID: BOALS DITCH							
2	CHLORIDE EPA 325.2	13	2	mg/L (PPM)	KMC	4/25/02	
2	NITROGEN, NITRATE - EPA 353.2	ND	0.15	mg/L (PPM)	KMC	4/24/02	
SAMPLE ID: DITCH ACROSS FROM RENTALS							
3	CHLORIDE EPA 325.2	433	5	mg/L (PPM)	KMC	4/25/02	
3	NITROGEN, NITRATE - EPA 353.2	2.53	0.5	mg/L (PPM)	KMC	4/24/02	
SAMPLE ID: FIELD STORM RUNOFF							
4	CHLORIDE EPA 325.2	7	5	mg/L (PPM)	KMC	4/25/02	
4	NITROGEN,NITRATE+NITRITE-EPA 353.2	0.26	0.25	mg/L (PPM)	KMC	4/24/02	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER

WRS
GTCo

05/03/02

WRS - DEQ

Sample ID	Sample Date	Analysis Date	Analysis	Units	Result
Ditch across From House	4-22-02	4-23-02	Bod	mg/l	13.6
Books Ditch	4-19-02		Bod		235.0
Ditch Across Rental	4-21-02		Bod		>250
Storm Runoff	4-22-02		Bod		>250
Ditch across House	4-18-02	4-25-02	Chloride		11.0
Books Ditch	" "	" "	Chloride	13 mg/l	13.0
Ditch Across Rental	4-21-02	" "	" "	" "	433.0
Field Storm Runoff	4-22-02	" "	" "	mg/l	7.00
Ditch Across House	4-18-02	4-25-02	nitrate	" "	ND
Books Ditch	" "	" "	" "	" "	ND
Ditch Across Rental	4-21-02	4-25-02	" "	" "	2.63
Field Storm Runoff	4-22-02	4-25-02	" "	" "	.260

From Rental

Red dye

*Set after holding time

Signature, Lab Analyst

Rough Copy

DOK+S
05/02/02 GT Co.

2.1 COMPARISON OF STORMWATER QUALITY FROM DIFFERENT SOURCE AREAS

One of the conclusions of the massive national EPA NURP monitoring study was that while pollutant concentrations were indeed variable at each site, there appeared to be no statistical difference among commercial, industrial and residential land uses at the catchment level (25 to 500 acres). In general, mean pollutant concentrations found in stormwater runoff were surprisingly consistent at the catchment or watershed level (see Table 2.1). One example of this consistency is the mean phosphorus concentration observed in stormwater runoff at 37 different catchments across the U.S. with widely different climate, soils, density and vegetative cover (Figure 2.1). Despite such differences, the average concentration of total phosphorus is about the same no matter where the runoff was sampled.

TABLE 2.1: MEAN POLLUTANT CONCENTRATIONS (IN MG/L) FOR SELECTIVE PARAMETERS FOR STORMWATER RUNOFF (SOURCE: EPA, 1983)

Pollutant	*New Suburban NURP Sites (Washington, DC)*	*National NURP Study Average*
Phosphorus		
Total	0.26	0.46
Ortho	0.12	-
Nitrogen		
Total	2.00	3.31
Nitrate	0.48	0.96
TKN	1.51	2.35
COD	35.6	90.8
BOD (5-Day)	05.1	11.9
Metals		
Zinc	0.037	0.176
Lead	0.018	0.180
Copper	-	0.047

Traverse City Office:
606 Franklin Street
Traverse City, MI 49684
Mailing Address:
P.O. Box 6350
Traverse City, MI 49696
Tel 616 922-4921
Fax 616 922-8170

OMI

INVOICE

MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac, MI 49601-2158

Date: Apr. 4, 2002
Project No. Williamsburg
Invoice No. MD002-01

Attn: Sy Paulik

RECEIVED
APR - 9 2002
SURFACE WATER QUALITY DIVISION
CADILLAC DISTRICT OFFICE

This invoice is for laboratory analysis performed.

Sample Identification: Williamsburg samples

(1) BOD analysis @ $20.00	$20.00
(1) TSS analysis @ $10.00	$10.00
(1) Chloride analysis @ $15.00	$15.00
SUBTOTAL	**$ 45.00**
TOTAL AMOUNT DUE	**$ 45.00**

To Nancy
04/10/02
- jrd

Due and Payable Upon Receipt

Please send your remittance to:

Operations Management International, Inc.
606 Franklin Street
Traverse City, MI 49686

INDEX 37900
PCA 40530 PROJECT 480043
REC'D/APPROVED Michael Stephen

WK93

OMI

Traverse City Office:
606 Franklin Street
Traverse City, MI 49684
Mailing Address:
P.O. Box 6350
Traverse City, MI 49696
Tel 616 922-4921
Fax 616 922-8170

April 4, 2002

Sy Paulik
MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

Dear Sy:

Enclosed please find the results for your water samples. Analyses were performed according to the "Standard Methods for Examination of Water and Wastewater," 18th Edition.

If you have any questions concerning this result, please feel free to contact our laboratory by phoning (231) 922-4922.

Sincerely,

Liz Hart
Lab Analyst

mf

Enclosure: Lab Report, Invoice

OPERATIONS MANAGEMENT INTERNATIONAL
TRAVERSE CITY WASTEWATER TREATMENT PLANT

ANALYTICAL LABORATORY REPORT

CLIENT: MDEQ **REPORT DATE:** March 20, 2002

ADDRESS: Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

PROJECT: Williamsburg Results

Sample ID	Sample Date	Analysis Date	Analysis	Units	Result
MDEQ	3/13/02	3/14/02	BOD	mg/L	218
MDEQ	3/13/02	3/14/02	TSS	mg/L	52.9
MDEQ	3/13/02	3/14/02	Chloride	mg/L	63

Signature, Lab Analyst

** JOB STATUS REPORT AS OF MAR 20 02 17:00 PAGE. 01

MDEQ-CADILLAC

JOB #439

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	STATUS
001	3/20	16:59	DEQ:SWQD:COMP ENF	UF--S	00′ 19″	002	OK

DEQ

Michigan Department of Environmental Quality
Cadillac District Office
Surface Water Quality Division
120 W. Chapin Street
Cadillac, Michigan 49601-2158

Telephone: 231-775-3960
Facsimile: 231-775-1511

FACSIMILE COVER SHEET

TO: Janna Sebald

COMPANY: C&E

FAX NO: 517 373 2040

FROM: Sy V. Pavlik

EXTENSION: 62607

DATE: 3/20/02

2
NO. OF PAGES INCLUDING COVER SHEET

COMMENTS:
I Believe you have the lab results of process water in the site - Chloride then was 164 mg/L. [redacted]

WKS
GTCO

OPERATIONS MANAGEMENT INTERNATIONAL
TRAVERSE CITY WASTEWATER TREATMENT PLANT

ANALYTICAL LABORATORY REPORT

CLIENT: MDEQ

REPORT DATE: March 20, 2002

ADDRESS: Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

PROJECT: Williamsburg Results

Sample ID	Sample Date	Analysis Date	Analysis	Units	Result
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MDEQ	3/13/02	3/14/02	TSS	mg/L	52.9
MDEQ	3/13/02	3/14/02	Chloride	mg/L	63

Signature, Lab Analyst

FLOW MONITORING

Williamsburg Receiving and Storage
Facility Name 1

Date: April 15, 2002

GW283450
ID Number

INFLUENT FLOW

Sample Location	Sampling Frequency	Limit (gallons)	Daily Maximum Flow	Monthly Average Flow	Cumulative Year to Date Flow	Number of Limit Exceedances
None	Not Applicable	Not Applicable				

EFFLUENT FLOW

Sample Location	Sampling Frequency	Limit (gallons)	Daily Maximum Flow	Monthly Average Flow	Cumulative Year to Date Flow	Number of Limit Exceedances
EF-1	Daily	42,000 gpd	35,000 gal	14,750 gal	Not Applicable	ZERO
EF-1	Annual	15.3 mgy	Not Applicable	Not Applicable	1.33 MMgal	ZERO

FALL & WINTER IRRIGATION SEASON

Williamsburg Receiving and Storage
Facility Name 1

Date: April 15, 2002

GW283450
ID Number

LAND APPLICATION

Sample Location	Sampling Frequency	Limit: (in/day) (in/week) (in/month)	Daily Maximum Application Rate (Inches)	Weekly Maximum Application Rate (Inches)	Cumulative Year Application (Inches)	Number of Limit Exceedances
LA-2	Daily	0.4 in/day	1.0	Not Applicable	Not Applicable	8
LA-2	Weekly	0.4 in/wk	Not Applicable	2.0	8.0	4

EFFLUENT QUALITY

Williamsburg Receiving & Storage
Facility Name 1

Date: April 15, 2002

GW283450
ID Number

Sample Location	Sampling Frequency	Parameter	Units	Limit: Rule 2227	Limit: Rule 2228	Maximum Concentration	Monthly Average	Number of Limit Exceedances
EQ-1	Monthly	Tot. Inorganic Nitrogen	mg/l	5		4.37	4.37	ZERO
EQ-1	Monthly	Ammonia Nitrogen	mg/l			4.31	4.31	Not Applicable
EQ-1	Monthly	Nitrate Nitrogen	mg/l			< 0.15	< 0.15	Not Applicable
EQ-1	Monthly	Nitrite Nitrogen	mg/l			0.055	0.055	Not Applicable
EQ-1	Weekly	Specific Conductance	Umhos			-----	-----	Not Measured
EQ-1	Monthly	Sulfate	mg/l	250		-----	-----	Not Measured
EQ-1	Monthly	Sodium	mg/l	150		291	291	1
EQ-1	Monthly	Chloride	mg/l	250		650	650	1
EQ-1	Monthly	Tot. Phosphorus	mg/l	1		3.16	3.16	1

OMI, Inc.
606 Franklin Street
Traverse City, MI 49686
Tel 231 922.4922
Fax 231 992.8170

WMD
Williamsburg
Received
G.T. Co

May 20, 2002

Sy Paulik
MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

Dear Sy:

Enclosed please find the results for your water samples. Analyses were performed according to the "Standard Methods for Examination of Water and Wastewater," 18th Edition.

If you have any questions concerning this result, please feel free to contact our laboratory by phoning (231) 922-4922.

Sincerely,

Liz Hart
Lab Analyst

mf

Enclosure: Lab Report, Invoice

OPERATIONS MANAGEMENT INTERNATIONAL
TRAVERSE CITY WASTEWATER TREATMENT PLANT

ANALYTICAL LABORATORY REPORT

CLIENT: MDEQ **REPORT DATE:** May 20, 2002

ADDRESS: Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

PROJECT: Williamsburg Results

Sample ID	Sample Date	Analysis Date	Analysis	Units	Result
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Ditch across from house	4/18/02	4/25/02	Nitrate	mg/L	ND
Boals Ditch*	4/18/02	4/23/02	BOD	mg/L	35.0
Boals Ditch	4/18/02	4/25/02	Chloride	mg/L	13.0
Boals Ditch	4/18/02	4/25/02	Nitrate	mg/L	ND
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Ditch across from Rental	4/21/02	4/25/02	Chloride	mg/L	433
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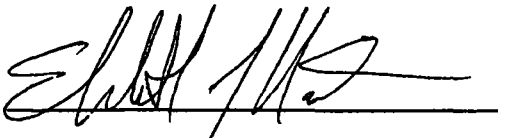
Field Storm Runoff	4/22/02	4/23/02	BOD	mg/L	>250
Field Storm Runoff	4/22/02	4/25/02	Chloride	mg/L	7.0
Field Storm Runoff	4/22/02	4/25/02	Nitrate	mg/L	.260
Williamsburg AP1*	4/27/02	4/30/02	BOD	mg/L	>250
Williamsburg AP2*	4/27/02	4/30/02	BOD	mg/L	>250
Williamsburg AP3*	4/27/02	4/30/02	BOD	mg/L	>250
Williamsburg AP1	4/27/02	4/30/02	Conductivity	Us/cm	341
Williamsburg AP2	4/27/02	4/30/02	Conductivity	Us/cm	365
Williamsburg AP3	4/27/02	4/30/02	Conductivity	Us/cm	281

Signature, Lab Analyst

Sample ID	Sample Date	Analysis Date	Analysis	Units	Result
Williamsburg R&S	5/2/02	5/3/02	BOD	mg/L	27.4
Williamsburg R&S	5/2/02	5/3/02	TSS	mg/L	42.1
Williamsburg R&S	5/2/02	5/3/02	NH3	mg/L	.098
Williamsburg R&S	5/2/02	5/6/02	Nitrate	mg/L	<.25
Williamsburg R&S	5/2/02	5/7/02	Chloride	mg/L	5.0
MDEQ	5/12/02	5/14/02	BOD	mg/L	54.6
MDEQ	5/12/02	5/14/02	TSS	mg/L	60.3

*Set after holding time



Signature, Lab Analyst

SOS analytical
3188 LAFRANIER ROAD · TRAVERSE CITY, MICHIGAN 49686 · (231) 946-6767 · FAX (231) 946-8741

COMPANY:	WILLIAMSBURG RECEIVING & STORAGE	SOS PROJECT NO:	001867 - 1
		SAMPLED BY:	PENNY HUBBELL/WR&S
NAME:			
PROJECT NO:	PERMIT# MI0044741	DATE RECEIVED:	07/17/00
WSSN:		TIME RECEIVED:	1:17 PM
WELL PERMIT:		SAMPLE ID:	OUTFALL 001 TO TOBACCO CREEK
TAX ID:			
LOCATION:	10190 MUNRO RD	DATE SAMPLED:	07/17/00
		TIME SAMPLED:	1:15 PM
	WILLIAMSBURG MI	SAMPLE MATRIX:	WASTE WATER
COUNTY:			
TWP:			

WET CHEMISTRY

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
BOD 5-DAY EPA 405.1	41	4	mg/L (PPM)	OMI	07/24/00	
pH EPA 150.1	7.2	+/- 0.1	s.u.	SS	07/17/00	
RESIDUE, NON-FILTERABLE(TSS)/SM2540D	10	1	mg/L (PPM)	ES	07/18/00	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY:
KIRK L. CHASE
CHEMIST / VICE PRESIDENT

SOS analytical
3188 LAFRANIER ROAD · TRAVERSE CITY, MICHIGAN 49686 · (231) 946-8787 · FAX (231) 946-8741

COMPANY:	WILLIAMSBURG RECEIVING & STORAGE	SOS PROJECT NO:	001903 - 1
		SAMPLED BY:	WR&S
NAME:			
PROJECT NO:	PERMIT# MI0044741	DATE RECEIVED:	07/19/00
WSSN:		TIME RECEIVED:	11:30 AM
WELL PERMIT:		SAMPLE ID:	OUTFALL 001 TO TOBACCO CREEK
TAX ID:			
LOCATION:	10190 MUNRO RD	DATE SAMPLED:	07/19/00
		TIME SAMPLED:	
	WILLIAMSBURG MI	SAMPLE MATRIX:	WASTE WATER
COUNTY:			
TWP:			

WET CHEMISTRY

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
BOD 5-DAY EPA 405.1	66	4	mg/L (PPM)	OMI	07/26/00	
RESIDUE, NON-FILTERABLE(TSS)/SM2540D	2	1	mg/L (PPM)	ES	07/20/00	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY:
KIRK L. CHASE
CHEMIST / VICE PRESIDENT

SOS analytical
3188 LAFRANIER ROAD · TRAVERSE CITY, MICHIGAN 49686 · (231) 946-6787 · FAX (231) 946-8741

COMPANY:	WILLIAMSBURG RECEIVING & STORAGE	SOS PROJECT NO:	001990 - 1
		SAMPLED BY:	PENNY HUBBELL/WR&S
NAME:			
PROJECT NO:	PERMIT# MI0044741	DATE RECEIVED:	07/25/00
WSSN:		TIME RECEIVED:	3:35 PM
WELL PERMIT:		SAMPLE ID:	OUTFALL 001 TO TOBACCO CREEK
TAX ID:			
LOCATION:	10190 MUNRO RD	DATE SAMPLED:	07/25/00
		TIME SAMPLED:	
	WILLIAMSBURG MI	SAMPLE MATRIX:	GRAB/WASTE WATER
COUNTY:			
TWP:			

WET CHEMISTRY

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
BOD 5-DAY EPA 405.1	30	7	mg/L (PPM)	OMI	07/31/00	
pH EPA 150.1	7.2	+/- 0.1	s.u.	SS	07/25/00	
RESIDUE, NON-FILTERABLE(TSS)/SM2540D	7	1	mg/L (PPM)	SS/ES	07/26/00	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: _____
KIRK L. CHASE
CHEMIST / VICE PRESIDENT

SOS analytical
3188 LAFRANIER ROAD · TRAVERSE CITY, MICHIGAN 49686 · (231) 946-6767 · FAX (231) 946-8741

COMPANY:	WILLIAMSBURG RECEIVING & STORAGE	SOS PROJECT NO:	002024 - 1
		SAMPLED BY:	PENNY HUBBELL/WR&S
NAME:			
PROJECT NO:	PERMIT# MI0044741	DATE RECEIVED:	07/27/00
WSSN:		TIME RECEIVED:	3:53 PM
WELL PERMIT:		SAMPLE ID:	OUTFALL 001 TO TOBACCO CREEK
TAX ID:			
LOCATION:	10190 MUNRO RD	DATE SAMPLED:	07/27/00
		TIME SAMPLED:	
	WILLIAMSBURG MI	SAMPLE MATRIX:	WASTE WATER
COUNTY:			
TWP:			

WET CHEMISTRY

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
BOD 5-DAY EPA 405.1	29	4	mg/L (PPM)	OMI	08/02/00	
RESIDUE, NON-FILTERABLE(TSS)/SM2540D	10	1	mg/L (PPM)	ES	07/31/00	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY:
KIRK L. CHASE
CHEMIST / VICE PRESIDENT

WK 2 J 27 Co

** JOB STATUS REPORT AS OF NOV 01 01 08:09 PAGE. 01

MDEQ-CADILLAC

JOB #700

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	STATUS
001	11/01	08:02	517 373 4797	EC--S	06'51"	022	OK

Michigan Department of Environmental Quality
Cadillac District Office
Surface Water Quality Division
120 W. Chapin Street
Cadillac, Michigan 49601-2158

Telephone: 231-775-3960
Facsimile: 231-775-1511

FACSIMILE COVER SHEET

TO: Rick Rusz

COMPANY: WMD - Lansing

FAX NO: 517-373-4797

FROM: Sy V. Pawlik

EXTENSION: 6267

DATE: 10/31/01

22
NO. OF PAGES INCLUDING COVER SHEET

COMMENTS:

Fax Jammed on 1st try - will send one more time. -jsd

** JOB STATUS REPORT AS OF OCT 31 01 16:44 PAGE. 01

MDEQ-CADILLAC

[redacted]

JOB #695

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	STATUS
[redacted]							
002		16:38	517 373 4797	EC--S	05' 16"	016	OK

Michigan Department of Environmental Quality
Cadillac District Office
Surface Water Quality Division
120 W. Chapin Street
Cadillac, Michigan 49601-2158

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COMMENTS:

Fax Jammed on 1st try - will send one more time. -Jsd

WKS
GTCo.

BALLENVIRONMENTALASSOCIATES

March 5, 2001

Mr. Mike Stifler, Supervisor
Cadillac District
Surface Water Quality Division
120 W. Chapin St.
Cadillac, MI 49601

RE: Surface Water Analytical Results Outfall 001, NPDES Permit #MI0044741, Williamsburg Receiving and Storage, 10190 Munro Rd., Williamsburg, Section 8, Whitewater Township, Grand Traverse County, Michigan.

Dear Mr. Stifler,

As previously reported to your office, [redacted] and Ball Environmental Associates have undertaken water quality sampling of effluent discharged in violation of NPDES Permit #MI0044741 at the above-referenced location.

Enclosed please find a copy of analytical results from February 26 and 28, 2001 sampling at Outfall #001 on [redacted] As summarized below, these results further document violations of water quality standards promulgated in administrative rules pursuant to Part 31 of NREPA, P.A. 451 of 1994, as amended.

Analyte (Method)	Outfall 001 – 10091 Munro Rd.	Water Quality Standard[1]
COD (SM5220D)	**2,180 mg/L (ppm)**	Indicates high concentrations of oxidizing compounds. Not addressed by permit.
Conductivity (SM2510-B)	780 *u*S/cm	Indicates presence of brine (elevated chlorides). Not allowed by permit.
Oil and Grease (EPA 413.1)	1 mg/L (ppm)	Not allowed in discharge.
pH (EPA 150.1)	**4.7**	6.5 – 9.0
BOD 5-day (EPA 405.1)	**3,838 mg/L (ppm)**	60 mg/L (ppm)

[1] NPDES Permit #MI0044741 and Part 4 Water Quality Standards, Part 31 Rules – Water Resources Protection, Michigan Natural Resources and Environmental Protection Act, P.A. 451 of 1994, as amended, 4/22/99.
Bold face indicates water quality standard noncompliance and/or permit violation.

BALL ENVIRONMENTAL ASSOCIATES, L.L.C.
P.O. Box 64 Lake Leelanau, Michigan 49653
ph/fx: 616-256-7824 bea@freeway.net

Exemption 6 applies to entire document for redactions

As indicated by these results, this facility is discharging effluent out of season and BOD results are more than 70 times the permitted maximum. Please acknowledge your receipt of this information in writing to Mr. Bradley Boals.

If you have any questions regarding this matter, please contact me at 231-256-7824 or bea@freeway.net.

Sincerely,
Ball Environmental Associates, L.L.C.

Christopher P. Grobbel, Ph.D.
Senior Project Manager

enclosures

File #1001-01

Cc: [redacted]

3188 LAFRANIER RD – TRAVERSE CITY, MICHIGAN 49686 – (231)946-6767 – FAX (231)946-8741

COMPANY:	BALL ENVIRONMENTAL	SOS PROJECT NO:	010400 - 1
		SAMPLED BY::	B. BOALS
NAME:			
PROJECT NO:		DATE RECEIVED:	2/16/01
WSSN:		TIME RECEIVED:	3:20 PM
WELL PERMIT:		SAMPLE ID:	OUTFALL
TAX ID:			
LOCATION:	MUNROE ST	DATE SAMPLED:	2/15/01
		TIME SAMPLED:	
		SAMPLE MATRIX:	WATER
	MI		
COUNTY:			
TWP:	WHITEWATER		

WET CHEMISTRY

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
CHEMICAL OXYGEN DEMAND SM5220D	2,180	5.0	mg/L (PPM)	SPL	2/26/01	
CONDUCTIVITY SM2510-B	780	1	uS/cm	SS	2/19/01	
OIL&GREASE EPA 413.1	1	1	mg/L (PPM)	SS/M	2/27/01	
pH EPA 150.1	4.7	+/- 0.1	s.u.	SS	2/28/01	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

Digitally signed by KIRK CHASE
cn=KIRK CHASE, o=SOS ANALYTICAL, c=US
Date: 2001.03.01 09:46:46 -05'00'
Reason: Document is certified

APPROVED BY: _____

KIRK L. CHASE
CHEMIST / VICE PRESIDENT

SOS [redacted]

3188 LAFRANIER RD – TRAVERSE CITY, MICHIGAN 49686 – (231)946-6767 – FAX (231)946-8741

COMPANY: BALL ENVIRONMENTAL

NAME:
PROJECT NO: [redacted]
WSSN:
WELL PERMIT:
TAX ID:
LOCATION: [redacted]

COUNTY:
TWP:

SOS PROJECT NO: 010403 - 1
SAMPLED BY:: CHRIS GROBBEL/BALL ENVIRON

DATE RECEIVED: 2/19/01
TIME RECEIVED: 9:30 AM
SAMPLE ID: OUTFALL 001

DATE SAMPLED: 2/19/01
TIME SAMPLED:
SAMPLE MATRIX: WATER

WET CHEMISTRY

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
BOD 5-DAY EPA 405.1	3,838	200	mg/L (PPM)	OMI	2/28/01	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

Digitally signed by KIRK CHASE
cn=KIRK CHASE, o=SOS ANALYTICAL, c=US
Date: 2001.03.01 15:50:00 -05'00'
Reason: Document is certified

APPROVED BY: _____
KIRK L. CHASE
CHEMIST / VICE PRESIDENT

Work Site ID: WR & S - 001
Matrix: Water
Received: 1/9/2001 Reported: 2/27/2001
Client: SWQ_CADILLAC Number of Samples: 1

1013 S. 131 Road, Route #1
Cadillac, MI 49601
Attn: CHANSY VONGPHASOUK
Total: $162.90

TEST UNITS	STATION 1			
Alkalinity of Water mg CaCO3/L	179			
Alkalinity - Bicarbonate mg CaCO3/L	179			
Alkalinity - Carbonate mg CaCO3/L	K 5			
Ammonia mg N/L	4.8			
Chloride in Water mg/L	2070			
COD mg/L	360			
Conductivity of Water umho/cm	7170			
Nitrate + Nitrite mg N/L	0.1 DL			
Nitrite mg N/L	K .01 HT DM			
Nitrogen - Kjeldahl mg N/L	34			
Ortho Phosphate mg P/L	.14 HT DM			
Phosphorus - Total mg P/L	4.8			
Solids - Suspended mg/L	A 94 NH			
Solids - Total Dissolved mg/L	7700			
Sulfate in Water mg/L	385			
TOC mg/L	2000			

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY (517) 335-9800

P.O. Box 30270
Lansing, MI 48909

Report To: Environmental Response Div.
District #6
120 W Chapin Street
Cadillac, MI 49601
Attn: CHANSY VONGPHASOUK
Total: $348.54

Lab Work Order # 0102095
Work Site ID: WILLIAMSBURG REC.&STORAGE
Matrix: Water
Received: 2/21/2001 **Reported:** 3/16/2001
Client: ER_CADILLAC **Number of Samples:** 2

TEST	UNITS	OUTFALL 1	SUMP 2
Alkalinity of Water	mg CaCO3/L	101	86
Alkalinity - Bicarbonate	mg CaCO3/L	101	86
Alkalinity - Carbonate	mg CaCO3/L	K 5	K 5
Ammonia	mg N/L	1.1	1.1
Chloride in Water	mg/L	166	QNS
COD - Titrimetric	mg/L	1900	2000
Conductivity of Water	umho/cm	1029	1215
Hex Chromium in Water	ug/L	INT	INT
Nitrate + Nitrite	mg N/L	K 0.1 DL	K 0.1 DL
Nitrite	mg N/L	K .1 DL HT	K .1 DL HT
Nitrogen - Kjeldahl	mg N/L	17	17
Ortho Phosphate	mg P/L	1.3 HT	1.7 HT
Phosphorus - Total	mg P/L	2.6	2.5
Solids - Suspended	mg/L	47	40
Solids - Total Dissolved	mg/L	1400	1900
Sulfate in Water	mg/L	176	QNS
TOC	mg/L	710 DL	720 DL

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY

ENVIRONMENTAL LABORATORY ANALYSIS REQUEST SHEET

LAB ORDER # 01-02-095

MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES/NO
Chansy Vongphasouk	Cadillac		

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA	PROJECT	PH
Williamsburg Receiving & Storage	37400	42600	480043	01

COLLECTED BY	PHONE	ADDITIONAL REPORT
Chansy Vongphasouk	(231) 775-3960	TO ATTENTION OF
OVERFLOW CONTRACT LAB (Required for ERD)	WXF 62267	AT (ADDRESS) (If different than above office)

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	COMMENTS
1	Outfall 1	2/16/01	11:00	H_2SO_4 added 2/20/01
2	Sump 2	2/16/01	11:15	Lab Acc. dept CN bo.
3				Shared CN-MN DMH
4				2/21/0
5				
6				
7				
8				
9				
10				

ORGANIC

VOA VOLATILES (624/8260)
- Full List 1 2 3 4 5 6 7 8 9 10
- BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

ON PESTICIDES/PCBS (608/8081/8082)
- Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
- Pesticides only 1 2 3 4 5 6 7 8 9 10
- PCBs only 1 2 3 4 5 6 7 8 9 10

****** NPDES ONLY ******
- Scan 3 (NPDES Only) 1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (625/8270)
- BNAs 1 2 3 4 5 6 7 8 9 10
- PNAs only 1 2 3 4 5 6 7 8 9 10
- BNs only 1 2 3 4 5 6 7 8 9 10
- ACIDs only 1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS
- Library Search (Qualitative)
- Volatiles 1 2 3 4 5 6 7 8 9 10
- Semivolatiles 1 2 3 4 5 6 7 8 9 10
- Other
- _____ 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

- DO Diss Oxygen 1 2 3 4 5 6 7 8 9 10
- GN NO_3, o-Phos 1 2 3 4 5 6 7 8 9 10
- Residue SS 1 2 3 4 5 6 7 8 9 10
- Residue TDS 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- BOD Tot 5 day 1 2 3 4 5 6 7 8 9 10
- BOD Carb 5 day 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- CA Chlorophyll 1 2 3 4 5 6 7 8 9 10
- GA COD 1 2 3 4 5 6 7 8 9 10
- TOC 1 2 3 4 5 6 7 8 9 10
- NO_3 + NO_2, NH_3 1 2 3 4 5 6 7 8 9 10
- KJEL N, Tot P 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- GG Phenolics 1 2 3 4 5 6 7 8 9 10
- GP Phenolics (screen) 1 2 3 4 5 6 7 8 9 10
- GB Total CN 1 2 3 4 5 6 7 8 9 10
- Amenable CN 1 2 3 4 5 6 7 8 9 10

INORGANIC

- MA Total Metals 1 2 3 4 5 6 7 8 9 10
- MAD Diss-Field Filtered 1 2 3 4 5 6 7 8 9 10
- MD Diss-Lab Filtered 1 2 3 4 5 6 7 8 9 10

Quantification Limit	High	Low
MICH TEN METALS	1 2 3 4 5 6 7 8 9 10	
(As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)		
Fe Co Li Mn	1 2 3 4 5 6 7 8 9 10	
Al Be Mo Ti V	1 2 3 4 5 6 7 8 9 10	
B Sr	1 2 3 4 5 6 7 8 9 10	
Ni - Nickel	1 2 3 4 5 6 7 8 9 10	
Sb - Antimony	1 2 3 4 5 6 7 8 9 10	
Tl - Thallium	1 2 3 4 5 6 7 8 9 10	
Ca Mg Na K	1 2 3 4 5 6 7 8 9 10	
Hardness	1 2 3 4 5 6 7 8 9 10	
MN pH, Conductance	1 2 3 4 5 6 7 8 9 10	
Cl, SO_4, Total Alk.	1 2 3 4 5 6 7 8 9 10	
HCO_3, CO_3	1 2 3 4 5 6 7 8 9 10	
Cr^{+6}	1 2 3 4 5 6 7 8 9 10	
OG Oil & Grease	1 2 3 4 5 6 7 8 9 10	

Chain-of-Custody	BOTTLE / TESTS	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
		1) UPS	D Harding	2-21-01 1004
		2)		

WR & S. already in file

DEQ

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY (517) 335-9800

P.O. Box 30270
Lansing, MI 48909

Report To: Surface Water Quality Div.
District #6
8015 S. 131 Road, Route #1
Cadillac, MI 49601
Attn: CHANSY VONGPHASOUK
Total: $162.90

Lab Work Order # 0101027
Work Site ID: WR & S - 001
Matrix: Water
Received: 1/9/2001
Client: SWQ_CADILLAC

Reported: 2/27/2001
Number of Samples: 1

TEST UNITS	STATION 1			
Alkalinity of Water mg CaCO3/L	179			
Alkalinity - Bicarbonate mg CaCO3/L	179			
Alkalinity - Carbonate mg CaCO3/L	K 5			
Ammonia mg N/L	4.8			
Chloride in Water mg/L	2070			
COD mg/L	360			
Conductivity of Water umho/cm	7170			
Nitrate + Nitrite mg N/L	0.1 DL			
Nitrite mg N/L	K .01 HT DM			
Nitrogen - Kjeldahl mg N/L	34			
Ortho Phosphate mg P/L	.14 HT DM			
Phosphorus - Total mg P/L	4.8			
Solids - Suspended mg/L	A 94 NH			
Solids - Total Dissolved mg/L	7700			
Sulfate in Water mg/L	385			
TOC mg/L	2000			

RECEIVED
MAR - 5 2001
SURFACE WATER QUALITY DIVISION
CADILLAC DISTRICT OFFICE

Printed 2/27/01 2:07 PM

This is an original report: Laura C Utsey Date: 2/28/01

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	PROCEDURE	NO: PD-13/Ver. 2
	LABORATORY SERVICES SECTION	DATE REV.:12/99

SUBJECT: Laboratory Result Remark Codes

EFFECTIVE DATE: December1999

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e., substance, if present, is below detection limit.
L	actual value is known to be greater than the value given.
T	value reported is less than criteria of detection.
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	QC indicated possible low recovery. Actual level may be higher.
LL	QC indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exist.
RB	reagent blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by:

Bob Avery, Laboratory Director 11/30/99
Date

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

LAB ORDER # 01-01-027 — MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES / NO
SWQD	Cadillac District	Chansy Vincyphausouk 231-775-3960 ext 6026	

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA	PROJECT	PH
WRS-001	37400	42600	480043	01

COLLECTED BY	PHONE	ADDITIONAL REPORT
CMA CW	(231) 775-3960 ext 6026	TO ATTENTION OF
OVERFLOW CONTRACT LAB (Required for ERD)		AT (ADDRESS) (If different than above office)

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	COMMENTS
1	Station 1	~~1-3-01~~ 1-3-01	10:00	
2		1-3-01		
3				
4				
5				
6				
7				
8				
9				
10				

ORGANIC

VOA VOLATILES (624/8260)
- Full List 1 2 3 4 5 6 7 8 9 10
- BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

ON PESTICIDES/PCBS (608/8081/8082)
- Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
- Pesticides only 1 2 3 4 5 6 7 8 9 10
- PCBs only 1 2 3 4 5 6 7 8 9 10

****** NPDES ONLY******
- Scan 3 (NPDES Only) 1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (625/8270)
- BNAs 1 2 3 4 5 6 7 8 9 10
- PNAs only 1 2 3 4 5 6 7 8 9 10
- BNs only 1 2 3 4 5 6 7 8 9 10
- ACIDs only 1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS

Library Search (Qualitative)
- Volatiles 1 2 3 4 5 6 7 8 9 10
- Semivolatiles 1 2 3 4 5 6 7 8 9 10

Other
- _____ 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

DO Diss Oxygen 1 2 3 4 5 6 7 8 9 10

GN NO_2, o-Phos 1 2 3 4 5 6 7 8 9 10
- Residue SS 1 2 3 4 5 6 7 8 9 10
- Residue TDS 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- ~~BOD Tot 5 day~~ 1 2 3 4 5 6 7 8 9 10
- BOD Carb 5 day 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10

CA Chlorophyll 1 2 3 4 5 6 7 8 9 10

GA COD 1 2 3 4 5 6 7 8 9 10
- TOC 1 2 3 4 5 6 7 8 9 10
- NO3 + NO2, NH3 1 2 3 4 5 6 7 8 9 10
- KJEL N, Tot P 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10

GG Phenolics 1 2 3 4 5 6 7 8 9 10

GP Phenolics (NPDES) 1 2 3 4 5 6 7 8 9 10

GB Total CN 1 2 3 4 5 6 7 8 9 10
- Amenable CN 1 2 3 4 5 6 7 8 9 10

INORGANIC

MA Total Metals 1 2 3 4 5 6 7 8 9 10

MAD Diss-Field Filtered 1 2 3 4 5 6 7 8 9 10

MD Diss-Lab Filtered 1 2 3 4 5 6 7 8 9 10

Quantification Limit	High	Low
MICH TEN METALS	1 2 3 4 5 6 7 8 9 10	

(As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)
- Fe Co Li Mn 1 2 3 4 5 6 7 8 9 10
- Al Be Mo Ti V 1 2 3 4 5 6 7 8 9 10
- B Sr 1 2 3 4 5 6 7 8 9 10
- Ni - Nickel 1 2 3 4 5 6 7 8 9 10
- Sb - Antimony 1 2 3 4 5 6 7 8 9 10
- Tl - Thallium 1 2 3 4 5 6 7 8 9 10
- Ca Mg Na K 1 2 3 4 5 6 7 8 9 10
- Hardness 1 2 3 4 5 6 7 8 9 10

MN, pH, Conductance 1 2 3 4 5 6 7 8 9 10
- Cl, SO_4, Total Alk 1 2 3 4 5 6 7 8 9 10
- HCO_3, CO_3 1 2 3 4 5 6 7 8 9 10
- Cr^{+6} 1 2 3 4 5 6 7 8 9 10

OG Oil & Grease 1 2 3 4 5 6 7 8 9 10

Chain-of-Custody	BOTTLE / TESTS	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
		1) UPS	Bryan Edgehouse	1/9/01 945
		2)		

WR & S GT Co.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY (517) 335-9800

P.O. Box 30270
Lansing, MI 48909

Report To: Surface Water Quality Div.
District #6
8015 S. 131 Road, Route #1
Cadillac, MI 49601
Attn: CHANSY VONGPHASOUK
Total: $162.90

Lab Work Order # 0101027
Work Site ID: WR & S - 001
Matrix: Water
Received: 1/9/2001
Client: SWQ_CADILLAC

Reported: 2/27/2001
Number of Samples: 1

TEST UNITS	STATION 1			
Alkalinity of Water mg CaCO3/L	179			
Alkalinity - Bicarbonate mg CaCO3/L	179			
Alkalinity - Carbonate mg CaCO3/L	K 5			
Ammonia mg N/L	4.8			
Chloride in Water mg/L	2070			
COD mg/L	360			
Conductivity of Water umho/cm	7170			
Nitrate + Nitrite mg N/L	0.1 DL			
Nitrite mg N/L	K .01 HT DM			
Nitrogen - Kjeldahl mg N/L	34			
Ortho Phosphate mg P/L	.14 HT DM			
Phosphorus - Total mg P/L	4.8			
Solids - Suspended mg/L	A 94 NH			
Solids - Total Dissolved mg/L	7700			
Sulfate in Water mg/L	385			
TOC mg/L	2000			

This is an original report: Louis C Utens Date: 2/28/01

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	PROCEDURE	NO: PD-13/Ver. 2
	LABORATORY SERVICES SECTION	DATE REV.:12/99

SUBJECT: Laboratory Result Remark Codes

EFFECTIVE DATE: December1999

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e., substance, if present, is below detection limit.
L	actual value is known to be greater than the value given.
T	value reported is less than criteria of detection.
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	QC indicated possible low recovery. Actual level may be higher.
LL	QC indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exist.
RB	reagent blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by:

Bob Avery, Laboratory Director 11/30/99
Date

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

LAB ORDER # 01-01-027 MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES / NO
SWQD	Cadillac District	Chansy Vongphoasouk 231-775-3960 ext 6026	

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA#	PROJECT	PH
WR-S-001	37400	42600	480043 01	

COLLECTED BY	PHONE	ADDITIONAL REPORT
GMA CV	(231) 775-3960 ext 6026	TO ATTENTION OF
OVERFLOW CONTRACT LAB (Required for ERD)		AT (ADDRESS) (If different than above office)

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	COMMENTS
1	Station 1	~~1-3-01~~ 1-8-01	10:00	
2				
3		1-5-01	GRAB	
4				
5				
6				
7				
8				
9				
10				

ORGANIC

VOA VOLATILES (624/8260)
- Full List 1 2 3 4 5 6 7 8 9 10
- BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

ON PESTICIDES/PCBS (608/8081/8082)
- Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
- Pesticides only 1 2 3 4 5 6 7 8 9 10
- PCBs only 1 2 3 4 5 6 7 8 9 10

****** NPDES ONLY ******
- Scan 3 (NPDES Only) 1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (625/8270)
- BNAs 1 2 3 4 5 6 7 8 9 10
- PNAs only 1 2 3 4 5 6 7 8 9 10
- BNs only 1 2 3 4 5 6 7 8 9 10
- ACIDs only 1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS

Library Search (Qualitative)
- Volatiles 1 2 3 4 5 6 7 8 9 10
- Semivolatiles 1 2 3 4 5 6 7 8 9 10

Other
- _____ 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

DO Diss Oxygen 1 2 3 4 5 6 7 8 9 10

GN NO_3, o-Phos 1 2 3 4 5 6 7 8 9 10
- Residue SS 1 2 3 4 5 6 7 8 9 10
- Residue TDS 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- ~~BOD Tot 5 day~~ 1 2 3 4 5 6 7 8 9 10
- ~~BOD Carb 5 day~~ 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10

CA Chlorophyll 1 2 3 4 5 6 7 8 9 10

GA COD 1 2 3 4 5 6 7 8 9 10
- TOC 1 2 3 4 5 6 7 8 9 10
- NO3 + NO2, NH3 1 2 3 4 5 6 7 8 9 10
- KJEL N, Tot P 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10

GG Phenolics 1 2 3 4 5 6 7 8 9 10

GP Phenolics (NPDES) 1 2 3 4 5 6 7 8 9 10

GB Total CN 1 2 3 4 5 6 7 8 9 10
- Amenable CN 1 2 3 4 5 6 7 8 9 10

INORGANIC

MA Total Metals 1 2 3 4 5 6 7 8 9 10

MAD Diss-Field Filtered 1 2 3 4 5 6 7 8 9 10

MD Diss-Lab Filtered 1 2 3 4 5 6 7 8 9 10

Quantification Limit	High	Low
MICH TEN METALS (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)	1 2 3 4 5 6 7 8 9 10	
Fe Co Li Mn	1 2 3 4 5 6 7 8 9 10	
Al Be Mo Ti V	1 2 3 4 5 6 7 8 9 10	
B Sr	1 2 3 4 5 6 7 8 9 10	
Ni - Nickel	1 2 3 4 5 6 7 8 9 10	
Sb - Antimony	1 2 3 4 5 6 7 8 9 10	
Tl - Thallium	1 2 3 4 5 6 7 8 9 10	
Ca Mg Na K	1 2 3 4 5 6 7 8 9 10	
Hardness	1 2 3 4 5 6 7 8 9 10	

MN, pH, Conductance 1 2 3 4 5 6 7 8 9 10
- Cl, SO_4, Total Alk 1 2 3 4 5 6 7 8 9 10
- HCO_3/CO_3 1 2 3 4 5 6 7 8 9 10
- Cr^{+6} 1 2 3 4 5 6 7 8 9 10

OG Oil & Grease 1 2 3 4 5 6 7 8 9 10

Chain-of-Custody	BOTTLE / TESTS	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
		1) UPS	Bryan Edgehouse	1/9/01 945
		2)		

See Safety Section "Back of Form," page 2

DEQ

MIC AN DEPT. OF ENVIRONMENTAL QUALIT
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

SAFETY INFORMATION

(MUST BE COMPLETED PRIOR TO SAMPLE SUBMITTAL)

1 Are samples expected to contain cyanide (CN)? YES (NO)
If yes, at what level? _____

2 Are samples expected to be flamable? YES (NO)

3 Are samples expected to be acidic (pH < 5)? (YES) NO added H_2SO_4

4 Are samples expected to be caustic (pH > 8)? YES (NO)

5 Are samples expected to be a Biohazard? YES (NO)

6 Are samples expected to be reactive with water or acid? YES (NO)

7 Are samples expected to be radioactive? YES (NO)

8 Are samples expected to contain dioxin? YES (NO)

9 Are samples expected to be explosive? YES (NO)

10 List additional suspected hazard information.

_____

_____

_____

PRESERVATIVE TRACKING NUMBERS

BOTTLE CODE	PRESER-VATIVE	PRESERVATIVE TRACKING NUMBER (FL NUMBER)	BOTTLE CODE	PRESER-VATIVE	PRESERVATIVE TRACKING NUMBER (FL NUMBER)
VOA	HCl	FL -	CA	$MgCO_3$	FL -
DO	WINKLER	FL -	MA/MAD	HNO_3	FL -
GA/GG	H_2SO_4	FL - PF-041	OG	H_2SO_4	FL -
GB	NaOH	FL -			FL -
S	ZnAC	FL -			FL -
S	NaOH	FL -			FL -

WORKS GT Co.

BRANDT FISHER ALWARD & ROY, P.C.
ATTORNEYS AT LAW

DONALD A. BRANDT
JOSEPH C. FISHER
THOMAS R. ALWARD
EDGAR ROY III
MATTHEW D. VERMETTEN
THOMAS A. PEZZETTI, JR.
VICKI P. KUNDINGER
JOHN M. GROGAN
JAMES R. MODRALL III*
*Also Admitted in Illinois and Wisconsin

Traverse City Office:
401 Munson Avenue
P.O. Box 5817
Traverse City, MI 49696-5817
(231) 941-9660
Facsimile (231) 941-9568
E-mail: sroy@blaslaw.com

Reply To: Traverse City Office

Elk Rapids Office:
9060 North Bayshore Drive
P.O. Box 576
Elk Rapids, MI 49629
(231) 264-5614
Facsimile (231) 264-5785

January 4, 2001

Via Facsimile

Tom Weston
Department of Environmental Quality
Waste Management Division
PO Box 30166
Lansing, MI 48909
(Facsimile: 517-373-4797)

Janice Hoyer
Department of Environmental Quality
120 W. Chapin Street
Cadillac, MI 49601
(Facsimile: 231-775-1511)

Re: Williamsburg Receiving & Storage, Inc. Ground Water Discharge Permit

Dear Tom and Janice:

I am writing you concerning the status of review and issuance of the ground water discharge permit. I received a rough draft permit via facsimile on September 6. I note that Chris Hubbell was to provide you with additional information and I believe that occurred at least one month ago.

Within the next seven days, could you please advise as to the following:

1. Is there any specific information/documentation you need from Mr. Hubbell or myself at this juncture?

2. Has the draft permit been approved by the appropriate people in your department? If not, what work remains?

3. When can we expect to receive notice of the fact that the proposed permit has been publicized for public comment?

BRANDT FISHER ALWARD & ROY, P.C.
ATTORNEYS AT LAW

Your anticipated cooperation has been appreciated.

Sincerely,

BRANDT, FISHER, ALWARD & ROY, P.C.

Edgar Roy III

ER/ljd
cc Chris Hubbell

WRSD
GT Co.

STATE OF MICHIGAN

JOHN ENGLER, Governor
DEPARTMENT OF ENVIRONMENTAL QUALITY
HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973
RUSSELL J. HARDING, Director

REPLY TO:

LABORATORY SECTION
DRINKING WATER & RADIOLOGICAL PROTECTION DIVISION
3350 N MARTIN L KING JR BLVD
PO BOX 30270
LANSING MI 48909-7770

TO: Cheryl Vongphasouk
SWQD, Cadillac

RECEIVED
JAN 11 2001
SURFACE WATER QUALITY DIVISION
CADILLAC DISTRICT OFFICE

☒ 1. Copy for your records.

☐ 2. Change in Analysis Request.

☐ 3. Other: ______

Bryan Delgrasch 1/9/01
Sample Receiving Date
Bldg. #44, Third Floor (Rm 303)
Telephone #: (517) 335-9800
Fax #: (517) 335-9600

EQP 0100e
(10/95)

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

LAB ORDER # 01-01-027 MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES / NO
SWQD	Cadillac District	Chansy Vanophosouk 231-775-3960 ext 6036	

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA#	PROJECT	PH
WRS-001	37400	42600	480043	01

COLLECTED BY	PHONE	ADDITIONAL REPORT
GMA CN	(231) 775-3960 ext 6036	TO ATTENTION OF
OVERFLOW CONTRACT LAB (Required for ERD)		AT (ADDRESS) (If different than above office)

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	COMMENTS
1	Station 1	~~1/3/01~~ 1-3-01	10:00	Data is wrong. Samples taken 1/5/01 sent to lab 1/8/01 SY
2				
3				
4				
5				
6				
7				
8				
9				
10				

ORGANIC

VOA VOLATILES (624/8260)
- Full List 1 2 3 4 5 6 7 8 9 10
- BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

ON PESTICIDES/PCBS (608/8081/8082)
- Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
- Pesticides only 1 2 3 4 5 6 7 8 9 10
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****** NPDES ONLY******
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BNA BASE NEUTRAL & ACIDS (625/8270)
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SPECIAL REQUESTS

Library Search (Qualitative)
- Volatiles 1 2 3 4 5 6 7 8 9 10
- Semivolatiles 1 2 3 4 5 6 7 8 9 10

Other
- _____ 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

DO Diss Oxygen 1 2 3 4 5 6 7 8 9 10

GN NO_2, o-Phos 1 2 3 4 5 6 7 8 9 10
- Residue SS 1 2 3 4 5 6 7 8 9 10
- Residue TDS 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- ~~BOD Tot 5 day~~ 1 2 3 4 5 6 7 8 9 10
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- _____ 1 2 3 4 5 6 7 8 9 10

CA Chlorophyll 1 2 3 4 5 6 7 8 9 10

GA COD 1 2 3 4 5 6 7 8 9 10
- TOC 1 2 3 4 5 6 7 8 9 10
- NO3 + NO2, NH3 1 2 3 4 5 6 7 8 9 10
- KJEL N, Tot P 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10

GG Phenolics 1 2 3 4 5 6 7 8 9 10

GP Phenolics (DISTIL) 1 2 3 4 5 6 7 8 9 10

GB Total CN 1 2 3 4 5 6 7 8 9 10
- Amenable CN 1 2 3 4 5 6 7 8 9 10

INORGANIC

MA Total Metals 1 2 3 4 5 6 7 8 9 10

MAD Diss-Field Filtered 1 2 3 4 5 6 7 8 9 10

MD Diss-Lab Filtered 1 2 3 4 5 6 7 8 9 10

Quantification Limit	High	Low
MICH TEN METALS	1 2 3 4 5 6 7 8 9 10	
(As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)		
Fe Co Li Mn	1 2 3 4 5 6 7 8 9 10	
Al Be Mo Ti V	1 2 3 4 5 6 7 8 9 10	
B Sr	1 2 3 4 5 6 7 8 9 10	
Ni - Nickel	1 2 3 4 5 6 7 8 9 10	
Sb - Antimony	1 2 3 4 5 6 7 8 9 10	
Tl - Thallium	1 2 3 4 5 6 7 8 9 10	
Ca Mg Na K	1 2 3 4 5 6 7 8 9 10	
Hardness	1 2 3 4 5 6 7 8 9 10	

MN, pH, Conductance 1 2 3 4 5 6 7 8 9 10
- Cl, SO_4, Total Alk 1 2 3 4 5 6 7 8 9 10
- HCO_3, CO_3 1 2 3 4 5 6 7 8 9 10
- Cr^{+6} 1 2 3 4 5 6 7 8 9 10

OG Oil & Grease 1 2 3 4 5 6 7 8 9 10

Chain-of-Custody	BOTTLE / TESTS	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
		1) UPS	Bryan Dolphausch	1/9/01 945
		2)		

DEQ

MIC AN DEPT. OF ENVIRONMENTAL QUALIT
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

SAFETY INFORMATION

(MUST BE COMPLETED PRIOR TO SAMPLE SUBMITTAL)

1 Are samples expected to contain cyanide (CN)? YES (NO)
If yes, at what level? _____

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4 Are samples expected to be caustic (pH > 8)? YES (NO)

5 Are samples expected to be a Biohazard? YES (NO)

6 Are samples expected to be reactive with water or acid? YES (NO)

7 Are samples expected to be radioactive? YES (NO)

8 Are samples expected to contain dioxin? YES (NO)

9 Are samples expected to be explosive? YES (NO)

10 List additional suspected hazard information.

_____

_____

_____

PRESERVATIVE TRACKING NUMBERS

BOTTLE CODE	PRESER-VATIVE	PRESERVATIVE TRACKING NUMBER (FL NUMBER)	BOTTLE CODE	PRESER-VATIVE	PRESERVATIVE TRACKING NUMBER (FL NUMBER)
VOA	HCl	FL -	CA	$MgCO_3$	FL -
DO	WINKLER	FL -	MA/MAD	HNO_3	FL -
GA/GG	H_2SO_4	FL - PF-041	OG	H_2SO_4	FL -
GB	NaOH	FL -			FL -
S	ZnAC	FL -			FL -
S	NaOH	FL -			FL -

WR & S
GT Co.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY (517) 335-9800

P.O. Box 30270
Lansing, MI 48909

Report To: Environmental Response Div.
District #6
120 W Chapin Street
Cadillac, MI 49601
Attn: CHANSY VONGPHASOUK
Total: $348.54

Lab Work Order # 0102095
Work Site ID: WILLIAMSBURG REC.&STORAGE
Matrix: Water
Received: 2/21/2001 **Reported:** 3/16/2001
Client: ER_CADILLAC **Number of Samples:** 2

TEST UNITS	OUTFALL 1	SUMP 2		
Alkalinity of Water mg CaCO3/L	101	86		
Alkalinity - Bicarbonate mg CaCO3/L	101	86		
Alkalinity - Carbonate mg CaCO3/L	K 5	K 5		
Ammonia mg N/L	1.1	1.1		
Chloride in Water mg/L	166	QNS		
COD - Titrimetric mg/L	1900	2000		
Conductivity of Water umho/cm	1029	1215		
Hex Chromium in Water ug/L	INT	INT		
Nitrate + Nitrite mg N/L	K 0.1 DL	K 0.1 DL		
Nitrite mg N/L	K .1 DL HT	K .1 DL HT		
Nitrogen - Kjeldahl mg N/L	17	17		
Ortho Phosphate mg P/L	1.3 HT	1.7 HT		
Phosphorus - Total mg P/L	2.6	2.5		
Solids - Suspended mg/L	47	40		
Solids - Total Dissolved mg/L	1400	1900		
Sulfate in Water mg/L	176	QNS		
TOC mg/L	710 DL	720 DL		

RECEIVED
MAR 22 2001
SURFACE WATER QUALITY DIVISION
CADILLAC DISTRICT OFFICE

This is an original report: _____ Date: _____

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	PROCEDURE	NO: PD-13/Ver. 2
	LABORATORY SERVICES SECTION	DATE REV.:12/99

SUBJECT: Laboratory Result Remark Codes

EFFECTIVE DATE: December1999

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e., substance, if present, is below detection limit.
L	actual value is known to be greater than the value given.
T	value reported is less than criteria of detection.
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	QC indicated possible low recovery. Actual level may be higher.
LL	QC indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exist.
RB	reagent blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by:

Bob Avery, Laboratory Director 11/30/99 Date

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

LAB ORDER # 01-02-095 MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES/NO
Chansu Vongphasouk	Cadillac	37400 42600 480043 01	
LOCATION SAMPLED / SITE ID NUMBER		INDEX PCA PROJECT PH	
Williamsburg Receiving & Storage			

COLLECTED BY	PHONE	ADDITIONAL REPORT
Chansu Vongphasouk	231 775-3960	TO ATTENTION OF
OVERFLOW CONTRACT LAB (Required for ERD)	DWT 6267	AT (ADDRESS) (If different than above office)

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	COMMENTS
1	outfall 1	2/16/01	11:00	H_2SO_4 added 2/20/01
2	Sump 2	2/16/01	11:15	Lab Acc. dent CN box
3				shared CN-MN DMIT
4				2/21/0
5				
6				
7				
8				
9				
10				

ORGANIC

VOA VOLATILES (624/8260)
- Full List 1 2 3 4 5 6 7 8 9 10
- BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

ON PESTICIDES/PCBS (608/8081/8082)
- Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
- Pesticides only 1 2 3 4 5 6 7 8 9 10
- PCBs only 1 2 3 4 5 6 7 8 9 10

****** NPDES ONLY ******
- Scan 3 (NPDES Only) 1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (625/8270)
- BNAs 1 2 3 4 5 6 7 8 9 10
- PNAs only 1 2 3 4 5 6 7 8 9 10
- BNs only 1 2 3 4 5 6 7 8 9 10
- ACIDs only 1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS
- Library Search (Qualitative)
- Volatiles 1 2 3 4 5 6 7 8 9 10
- Semivolatiles 1 2 3 4 5 6 7 8 9 10
- Other
- _____ 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

- DO Diss Oxygen 1 2 3 4 5 6 7 8 9 10
- GN NO_3, o-Phos 1 2 3 4 5 6 7 8 9 10
- Residue SS 1 2 3 4 5 6 7 8 9 10
- Residue TDS 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- BOD Tot 5 day 1 2 3 4 5 6 7 8 9 10
- BOD Carb 5 day 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- CA Chlorophyll 1 2 3 4 5 6 7 8 9 10
- GA COD 1 2 3 4 5 6 7 8 9 10
- TOC 1 2 3 4 5 6 7 8 9 10
- NO3 + NO2, NH3 1 2 3 4 5 6 7 8 9 10
- KJEL N, Tot P 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- GG Phenolics 1 2 3 4 5 6 7 8 9 10
- GP Phenolics (auto) 1 2 3 4 5 6 7 8 9 10
- GB Total CN 1 2 3 4 5 6 7 8 9 10
- Amenable CN 1 2 3 4 5 6 7 8 9 10

INORGANIC

- MA Total Metals 1 2 3 4 5 6 7 8 9 10
- MAD Diss-Field Filtered 1 2 3 4 5 6 7 8 9 10
- MD Diss-Lab Filtered 1 2 3 4 5 6 7 8 9 10

Quantification Limit High Low
- MICH TEN METALS 1 2 3 4 5 6 7 8 9 10
- (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)
- Fe Co Li Mn 1 2 3 4 5 6 7 8 9 10
- Al Be Mo Ti V 1 2 3 4 5 6 7 8 9 10
- B Sr 1 2 3 4 5 6 7 8 9 10
- Ni - Nickel 1 2 3 4 5 6 7 8 9 10
- Sb - Antimony 1 2 3 4 5 6 7 8 9 10
- Tl - Thallium 1 2 3 4 5 6 7 8 9 10
- Ca Mg Na K 1 2 3 4 5 6 7 8 9 10
- Hardness 1 2 3 4 5 6 7 8 9 10
- MN pH, Conductance 1 2 3 4 5 6 7 8 9 10
- Cl, SO_4, Total Alk 1 2 3 4 5 6 7 8 9 10
- HCO_3, CO_3 1 2 3 4 5 6 7 8 9 10
- Cr^{+6} 1 2 3 4 5 6 7 8 9 10
- OG Oil & Grease 1 2 3 4 5 6 7 8 9 10

Chain-of-Custody	BOTTLE / TESTS	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
		1) UPS	D Harding	2-21-01 1004
		2)		

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

SAFETY INFORMATION

(MUST BE COMPLETED PRIOR TO SAMPLE SUBMITTAL)

1 Are samples expected to contain cyanide (CN)? YES (NO)
If yes, at what level? _____

2 Are samples expected to be flamable? YES (NO)

3 Are samples expected to be acidic (pH < 5)? YES (NO)

4 Are samples expected to be caustic (pH > 8)? YES (NO)

5 Are samples expected to be a Biohazard? YES (NO)

6 Are samples expected to be reactive with water or acid? YES (NO)

7 Are samples expected to be radioactive? YES (NO)

8 Are samples expected to contain dioxin? YES (NO)

9 Are samples expected to be explosive? YES (NO)

10 List additional suspected hazard information.

_____

_____

_____

PRESERVATIVE TRACKING NUMBERS

BOTTLE CODE	PRESER-VATIVE	PRESERVATIVE TRACKING NUMBER (FL NUMBER)	BOTTLE CODE	PRESER-VATIVE	PRESERVATIVE TRACKING NUMBER (FL NUMBER)
VOA	HCl	FL -	CA	$MgCO_3$	FL -
DO	WINKLER	FL -	MA/MAD	HNO_3	FL -
GA/GG	H_2SO_4	FL -	OG	H_2SO_4	FL - PF-041
GB	NaOH	FL -			FL -
S	ZnAC	FL -			FL -
S	NaOH	FL -			FL -

WRES
GT Co.

COPY

2/16/01

RECEIVED
MAR - 8 2001
SURFACE WATER QUALITY DIVISION
CADILLAC DISTRICT OFFICE

Attn: Sy Vongphasouk DEQ-SWQD
Department of Environmental Quality
120 West Chapin
Cadillac, MI 49601

Dear Sy:

We are submitting in writing an explanation of the 02-16-01 accidental water discharge that occurred.

We monitor our discharge system twice daily and were unaware that there was a problem with the system until our inspection of 02-16-01. Upon inspection we discovered that the pumps were not operating. The pump motors were submersed in water and therefore were not operating.

We have developed a monitoring sheet to document our daily inspection of the water discharge system to aid our efforts in controlling all water discharge effectively and efficiently.

Sincerely,

Chris Hubbell

Chris Hubbell-President
Williamsburg Receiving & Storage LLC

Mailed 2-19-01

SUPPLEMENTAL LETTER

3/7/01

Attn: Sy Vongphasouk DEQ-SWQD
Department of Environmental Quality
120 West Chapin
Cadillac MI 49601

Dear Sy:

This is a supplemental letter to the letter dated 02-16-01 which we wrote to you regarding the accidental discharge of water on 02-16-01 and 02-17-01.

The cause of the discharge was a failure of our pumps in our sump system. The pumps had stopped operating which caused our sump to fill with water allowing accidental discharge of water into the Ptebeco swamp pipeline. As soon as we were aware of this problem we replaced the damaged pumps and pumped the balance of the standing water that had accumulated in our sump up into our holding pond. Unfortunately the concerned citizen that called PEAS did not also call us so that repairs could have been made immediately upon his or her discovery.

The period of time that was involved was some time in the late evening of 02-16-01 and the system was repaired and operating correctly by mid-day 02-17-01 which was within two hours of our awareness of the discharge.

The description of the discharge is waste water from our pitting plant operation.

The pumps have been replaced with new pumps and we do not anticipate this happening again.

Sincerely,

Chris Hubbell

Chris Hubbell-President
Williamsburg Receiving & Storage LLC

file
WR+S

To: **PCS Unit**
Subject: SWQD DATA ENTRY FOR SCHEDULED INSPECTIONS
Date: **3/1/01**

Surface Water Quality Division
Cadillac District Office

<<<<========== T O P O F F O R M ==========>>>>

DATA ENTRY FOR SCHEDULED INSPECTIONS
DEQ - Surface Water Quality Division

TO: SWQD PCS Unit DATE: _3_ / _8_ / _01_
FROM: Sy Vongphasouk DISTRICT: C
FACILITY NAME: Williamsburg Receiving & Storage
PERMIT NUMBER: MI 0044741 INSPECTOR (INSP): S FACILITY TYPE (FACC): _

==========

TYPE OF INSPECTION (TYPI) : R_ (C,D,R,S,X,)

MM DD YY
DATE OF INSPECTION (DTIN): _3_ / _1_ / _01_ (Date field work completed)

DATE REPORT TRANSMITTED (DTRR): __ / __ / __ (Date FINAL report transmitted)

** DATE FOR TRANSMITTAL (RDI2): __ / __ / __ (Not required for Recons)

COMMENTS (ICOM): _____

** NOTE: If the report has not been transmitted to the facility, a scheduled date for transmitting it MUST be entered into PCS. The shortest reasonable time between inspection field work completion and final report transmittal should be established, and no schedule should extend beyond the following time frames without adaquate justification:

CEI (C)-30 days CSI (S)-90 days CXI (X)-120 days (D)-30 days

Justification for extending the report transmission schedule:

_____

_____

1) Send this to your data entry person in PCS Unit
2) If the report transmitted date cannot be entered at that time, project the proposed date (RDI2) and enter that date also.

NOTES/COMMENTS: _On-site for a follow up inspection on the February notice letter to check if there was any discharge from the sump into Tobeco swamp. The level in the sump was very low & below the opening for the discharge of contact cooling waters. Spoke with Chris regarding how the problem could be fixed. He spoke with the manufacture of the pump and have come up with a new design.

_____

_____

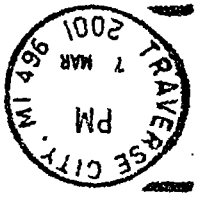
_____

PCS 10/97

<<<<========== E N D O F F O R M ==========>>>>

WILLIAMSBURG
RECEIVING &
STORAGE LLC
10190 Munro Road
Williamsburg, MI 49690

ATTN: SY VONGPHASOUK DEQ-SWQD
DEPARTMENT OF ENVIRONMENTAL
QUALITY
120 WEST CHAPIN
CADILLAC MI 49601



DK & S
GTG

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

RUSSELL J. HARDING, Director

REPLY TO:

LABORATORY SECTION
DRINKING WATER & RADIOLOGICAL PROTECTION DIVISION
3350 N MARTIN L KING JR BLVD
PO BOX 30270
LANSING MI 48909-7770

TO: Christy Vongkasomk
SWQ Cadillac

RECEIVED
FEB 26 2001
SURFACE WATER QUALITY DIVISION
CADILLAC DISTRICT OFFICE

- [x] 1. **Copy for your records.**
- [ ] 2. **Change in Analysis Request.**
- [x] 3. **Other:** Please note we are sharing the GW & Mn bottle for the sump. Hopefully this will not be a problem.

D Hartig 2/21/01

Sample Receiving — **Date**

Bldg. #44, Third Floor (Rm 303)
Telephone #: (517) 335-9800
Fax #: (517) 335-9600

EQP 0100e
(10/95)

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY

ENVIRONMENTAL LABORATORY ANALYSIS REQUEST SHEET

LAB ORDER # 01-02-095

MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES / NO
Chansy Vongphasouk	Cadillac		

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA	PROJECT	PH
Williamsburg Receiving & Storage	37400	42600	480043	01

3409

COLLECTED BY	PHONE	ADDITIONAL REPORT
Chansy Vongphasouk	231 775-3960	TO ATTENTION OF
OVERFLOW CONTRACT LAB (Required for ERD)		AT (ADDRESS) (If different than above office)

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SEE BACK OF FORM

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2	Sump 2	2/16/01	11:15	Shared CN-MN DMH 2/21/0
3				
4				
5				
6				
7				
8				
9				
10				

ORGANIC

VOA VOLATILES (624/8260)
- Full List 1 2 3 4 5 6 7 8 9 10
- BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

ON PESTICIDES/PCBS (608/8081/8082)
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- Scan 3 (NPDES Only) 1 2 3 4 5 6 7 8 9 10

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- BNAs 1 2 3 4 5 6 7 8 9 10
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- Library Search (Qualitative)
- Volatiles 1 2 3 4 5 6 7 8 9 10
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- TOC 1 2 3 4 5 6 7 8 9 10
- NO3 + NO2, NH3 1 2 3 4 5 6 7 8 9 10
- KJEL N, Tot P 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- GG Phenolics 1 2 3 4 5 6 7 8 9 10
- GP Phenolics (WDNR) 1 2 3 4 5 6 7 8 9 10
- GB Total CN 1 2 3 4 5 6 7 8 9 10
- Amenable CN 1 2 3 4 5 6 7 8 9 10

INORGANIC

- MA Total Metals 1 2 3 4 5 6 7 8 9 10
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- MD Diss-Lab Filtered 1 2 3 4 5 6 7 8 9 10

Quantification Limit: High Low
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  (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)
- Fe Co Li Mn 1 2 3 4 5 6 7 8 9 10
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- Ca Mg Na K 1 2 3 4 5 6 7 8 9 10
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- MN pH, Conductance 1 2 3 4 5 6 7 8 9 10
- Cl, SO_4, Total Alk. 1 2 3 4 5 6 7 8 9 10
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- Cr^{+6} 1 2 3 4 5 6 7 8 9 10
- OG Oil & Grease 1 2 3 4 5 6 7 8 9 10

#2

Chain-of-Custody	BOTTLE / TESTS	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
		1) UPS		2-21-01 1004
		2)		

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

SAFETY INFORMATION

(MUST BE COMPLETED PRIOR TO SAMPLE SUBMITTAL)

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If yes, at what level? _____

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7 Are samples expected to be radioactive? YES (NO)

8 Are samples expected to contain dioxin? YES (NO)

9 Are samples expected to be explosive? YES (NO)

10 List additional suspected hazard information.

_____

_____

_____

PRESERVATIVE TRACKING NUMBERS

BOTTLE CODE	PRESER-VATIVE	PRESERVATIVE TRACKING NUMBER (FL NUMBER)	BOTTLE CODE	PRESER-VATIVE	PRESERVATIVE TRACKING NUMBER (FL NUMBER)
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DO	WINKLER	FL -	MA/MAD	HNO_3	FL -
GA/GG	H_2SO_4	FL -	OG	H_2SO_4	FL - PF-041
GB	NaOH	FL -			FL -
S	ZnAC	FL -			FL -
S	NaOH	FL -			FL -

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

LAB ORDER # 01-02-095

MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES / NO
Chansy Vonaphasouk	Cadillac		

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA	PROJECT	PH
Williamsburg Receiving & Storage	37400	42600	480843	01

COLLECTED BY	PHONE	ADDITIONAL REPORT
Chansy Vonaphasouk	231-775-3960	TO ATTENTION OF
OVERFLOW CONTRACT LAB (Required for ERD)	WT6267	AT (ADDRESS) (If different than above office)

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

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2	Sump 2	2/16/01	11:15	Lab Acc. dent CN bot
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4				2/21/0
5				
6				
7				
8				
9				
10				

ORGANIC

VOA VOLATILES (624/8260)
- Full List 1 2 3 4 5 6 7 8 9 10
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- BNAs 1 2 3 4 5 6 7 8 9 10
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SPECIAL REQUESTS

Library Search (Qualitative)
- Volatiles 1 2 3 4 5 6 7 8 9 10
- Semivolatiles 1 2 3 4 5 6 7 8 9 10

Other
- _____ 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

DO Diss Oxygen 1 2 3 4 5 6 7 8 9 10

GN NO_3, o-Phos 1 2 3 4 5 6 7 8 9 10
- Residue SS 1 2 3 4 5 6 7 8 9 10
- Residue TDS 1 2 3 4 5 6 7 8 9 10
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- BOD Tot 5 day 1 2 3 4 5 6 7 8 9 10
- BOD Carb 5 day 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10

CA Chlorophyll 1 2 3 4 5 6 7 8 9 10

GA COD 1 2 3 4 5 6 7 8 9 10
- TOC 1 2 3 4 5 6 7 8 9 10
- NO3 + NO2, NH3 1 2 3 4 5 6 7 8 9 10
- KJEL N, Tot P 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10

GG Phenolics 1 2 3 4 5 6 7 8 9 10

GP Phenolics (prom) 1 2 3 4 5 6 7 8 9 10

GB Total CN 1 2 3 4 5 6 7 8 9 10
- Amenable CN 1 2 3 4 5 6 7 8 9 10

INORGANIC

MA Total Metals 1 2 3 4 5 6 7 8 9 10

MAD Diss-Field Filtered 1 2 3 4 5 6 7 8 9 10

MD Diss-Lab Filtered 1 2 3 4 5 6 7 8 9 10

Quantification Limit	High	Low
MICH TEN METALS	1 2 3 4 5 6 7 8 9 10	
(As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)		
Fe Co Li Mn	1 2 3 4 5 6 7 8 9 10	
Al Be Mo Ti V	1 2 3 4 5 6 7 8 9 10	
B Sr	1 2 3 4 5 6 7 8 9 10	
Ni - Nickel	1 2 3 4 5 6 7 8 9 10	
Sb - Antimony	1 2 3 4 5 6 7 8 9 10	
Tl - Thallium	1 2 3 4 5 6 7 8 9 10	
Ca Mg Na K	1 2 3 4 5 6 7 8 9 10	
Hardness	1 2 3 4 5 6 7 8 9 10	

MN pH, Conductance 1 2 3 4 5 6 7 8 9 10
- Cl, SO_4, Total Alk 1 2 3 4 5 6 7 8 9 10 #2
- HCO_3, CO_3 1 2 3 4 5 6 7 8 9 10
- Cr^{+6} 1 2 3 4 5 6 7 8 9 10

OG Oil & Grease 1 2 3 4 5 6 7 8 9 10

Chain-of-Custody	BOTTLE / TESTS	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
		1) UPS	DHarding	2-21-01 1004
		2)		

Williamsburg Receiving
G.T. Co

DEQ

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY (517) 335-9800

P.O. Box 30270
Lansing, MI 48909

Report To: Surface Water Quality Div.
District #6
8015 S. 131 Road, Route #1
Cadillac, MI 49601
Attn: CHANSY VONGPHASOUK
Total: $162.90

Lab Work Order # 0101027
Work Site ID: WR & S - 001
Matrix: Water
Received: 1/9/2001 **Reported:** 2/27/2001
Client: SWQ_CADILLAC **Number of Samples:** 1

TEST UNITS	STATION 1			
Alkalinity of Water mg CaCO3/L	179			
Alkalinity - Bicarbonate mg CaCO3/L	179			
Alkalinity - Carbonate mg CaCO3/L	K 5			
Ammonia mg N/L	4.8			
Chloride in Water mg/L	2070			
COD mg/L	360			
Conductivity of Water umho/cm	7170			
Nitrate + Nitrite mg N/L	0.1 DL			
Nitrite mg N/L	K .01 HT DM			
Nitrogen - Kjeldahl mg N/L	34			
Ortho Phosphate mg P/L	.14 HT DM			
Phosphorus - Total mg P/L	4.8			
Solids - Suspended mg/L	A 94 NH			
Solids - Total Dissolved mg/L	7700			
Sulfate in Water mg/L	385			
TOC mg/L	2000			

RECEIVED
MAR - 5 2001
SURFACE WATER QUALITY DIVISION
CADILLAC DISTRICT OFFICE

FLOW MONITORING

Williamsburg Receiving and Storage
Facility Name 1

Date

GW283450
ID Number

INFLUENT FLOW

Sample Location	Sampling Frequency	Limit (gallons)	Daily Maximum Flow	Monthly Average Flow	Cumulative Year to Date Flow	Number of Limit Exceedances

EFFLUENT FLOW

Sample Location	Sampling Frequency	Limit (gallons)	Daily Maximum Flow	Monthly Average Flow	Cumulative Year to Date Flow	Number of Limit Exceedances
EF-1	Daily	42,000 gpd				
EF-1	Annual	15.3 mgy				

SPRING & SUMMER IRRIGATION SEASON

Williamsburg Receiving and Storage
Facility Name 1

Date

GW283450
ID Number

LAND APPLICATION

Sample Location	Sampling Frequency	Limit: (in/day) (in/week) (in/month)	Daily Maximum Application Rate (Inches)	Weekly Maximum Application Rate (Inches)	Cumulative Year Application (Inches)	Number of Limit Exceedances
LA-1	Daily	0.09 in/day				
LA-1	Weekly	0.63 in/wk				

INFLUENT QUALITY

Facility Name 1

Date

ID Number

Sample Location	Sampling Frequency	Parameter	Units	Limit	Maximum Concentration	Monthly Average	Number of Limit Exceedances

EFFLUENT QUALITY

Williamsburg Receiving & Storage
Facility Name 1

Date

GW283450
ID Number

Sample Location	Sampling Frequency	Parameter	Units	Limit: Rule 2227	Limit: Rule 2228	Maximum Concentration	Monthly Average	Number of Limit Exceedances
EQ-1	Monthly	Tot. Inorganic Nitrogen	mg/l	5				
EQ-1	Monthly	Ammonia Nitrogen	mg/l					
EQ-1	Monthly	Nitrate Nitrogen	mg/l					
EQ-1	Monthly	Nitrite Nitrogen	mg/l					
EQ-1	Weekly	Specific Conductance	Umhos					
EQ-1	Monthly	Sulfate	mg/l	250				
EQ-1	Monthly	Sodium	mg/l	150				
EQ-1	Monthly	Chloride	mg/l	250				
EQ-1	Monthly	Tot. Phosphorus	mg/l	1				

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY (517) 335-9800

P.O. Box 30270
Lansing, MI 48909

Report To: Waste Management Division
120 W. Chapin Street
Cadillac, MI 49601-2158

Attn: JANICE HEUER
Total: $314.64

Lab Work Order # 0111231
Work Site ID: BOALS WELLS
Matrix: Water
Received: 11/29/2001 **Reported:** 12/26/2001
Client: WM_CADILLAC **Number of Samples:** 3

TEST UNITS	10091 MUNRO-S1	10115 MUNRO-S2	10125 MUNRO-S3	
Alkalinity of Water mg CaCO3/L	190	270	372	
Ammonia mg N/L	.05	.09	K 0.1 DL	
Calcium in Water mg/L	65.9	84.5	127	
Chloride in Water mg/L	3	9	85	
COD mg/L	K 5	K 5	14	
Hardness - Calculated mg/L	231	294	397	
Iron in Water ug/L	610	580	30	
Magnesium in Water mg/L	16.1	20.2	19.4	
Nitrate + Nitrite mg N/L	K .01	K .01	2.1	
Potassium in Water mg/L	0.7	1.0	2.4	
Sodium in Water mg/L	2.6	5.8	37.0	
Sulfate in Water mg/L	30	24	19	
Manganese - Total ug/L	73	130	677	

This is an original report: _____ Date: _____

RECEIVED
DEC 28 2001
WMD-CADILLAC

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	LABORATORY SERVICES SECTION PROCEDURE	NO: SOP 106 Ver. 3 DATE REV.: 05/01

SUBJECT: Laboratory Result Remark Codes

EFFECTIVE DATE: May 2001

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e., substance, if present, is below Reporting Limit (RL).
L	actual value is known to be greater than the value given.
T	value reported is less than Reporting Limit (RL).
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	QC indicated possible low recovery. Actual level may be higher.
LL	QC indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exist.
RB	reagent blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by:

Bob Avery 5/03/2001

Bob Avery, Laboratory Services Section Chief Date

5 Sa· ·la ?

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

LAB ORDER # 01-11-231

MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE		ACCEPT HT CODES? YES / NO
WMD	Cadillac	Janice Heuer		

INDEX 330 ~~TCA~~ ~~PROJECT~~ PLA 47006 PH

LOCATION SAMPLED / SITE ID NUMBER: ~~Janice Heuer~~ Boals Wells

COLLECTED BY: Janice Heuer

PHONE: (231) 775-3960 ext 6203

ADDITIONAL REPORT

TO ATTENTION OF

AT (ADDRESS) (If different than above office)

OVERFLOW CONTRACT LAB (Required for ERD)

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	COMMENTS
1	10091 Munro - S1	11/26/01	12:50	
2	10115 Munro - S2	"	1:25	
3	10125 Munro - S3	"	1:30	
4				
5				
6				
7				
8				
9				
10				

ORGANIC

VOA VOLATILES (624/8260)
- Full List 1 2 3 4 5 6 7 8 9 10
- BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

ON PESTICIDES/PCBS (608/8081/8082)
- Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
- Pesticides only 1 2 3 4 5 6 7 8 9 10
- PCBs only 1 2 3 4 5 6 7 8 9 10

****** NPDES ONLY******
- Scan 3 (NPDES Only) 1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (625/8270)
- BNAs 1 2 3 4 5 6 7 8 9 10
- PNAs only 1 2 3 4 5 6 7 8 9 10
- BNs only 1 2 3 4 5 6 7 8 9 10
- ACIDs only 1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS

Library Search (Qualitative)
- Volatiles 1 2 3 4 5 6 7 8 9 10
- Semivolatiles 1 2 3 4 5 6 7 8 9 10

Other
- ______ 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

DO Diss Oxygen 1 2 3 4 5 6 7 8 9 10

GN
- NO_2, o-Phos 1 2 3 4 5 6 7 8 9 10
- Residue SS 1 2 3 4 5 6 7 8 9 10
- Residue TDS 1 2 3 4 5 6 7 8 9 10
- ______ 1 2 3 4 5 6 7 8 9 10
- BOD Tot 5 day 1 2 3 4 5 6 7 8 9 10
- BOD Carb 5 day 1 2 3 4 5 6 7 8 9 10
- ______ 1 2 3 4 5 6 7 8 9 10

CA Chlorophyll 1 2 3 4 5 6 7 8 9 10

GA
- COD (1 2 3 circled) 1 2 3 4 5 6 7 8 9 10
- TOC 1 2 3 4 5 6 7 8 9 10
- NO3 + NO2, NH3 (1 2 3 circled) 1 2 3 4 5 6 7 8 9 10
- KJEL-N, Tot P 1 2 3 4 5 6 7 8 9 10
- ______ 1 2 3 4 5 6 7 8 9 10

GG Phenolics 1 2 3 4 5 6 7 8 9 10

GP Phenolics (NPDES) 1 2 3 4 5 6 7 8 9 10

GB
- Total CN 1 2 3 4 5 6 7 8 9 10
- Amenable CN 1 2 3 4 5 6 7 8 9 10

INORGANIC

- (MA circled) Total Metals (1 2 3 circled) 1 2 3 4 5 6 7 8 9 10
- MAD Diss-Field Filtered 1 2 3 4 5 6 7 8 9 10
- MD Diss-Lab Filtered 1 2 3 4 5 6 7 8 9 10

Quantification Limit High Low
- MICH TEN METALS 1 2 3 4 5 6 7 8 9 10
- (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)
- (Fe circled) Co Li (Mn circled) (1 2 3 circled) 1 2 3 4 5 6 7 8 9 10
- Al Be Mo Ti V 1 2 3 4 5 6 7 8 9 10
- B Sr 1 2 3 4 5 6 7 8 9 10
- Ni - Nickel 1 2 3 4 5 6 7 8 9 10
- Sb - Antimony 1 2 3 4 5 6 7 8 9 10
- Tl - Thallium 1 2 3 4 5 6 7 8 9 10
- (Ca Mg Na K circled) (1 2 3 circled) 1 2 3 4 5 6 7 8 9 10
- (Hardness circled) (1 2 3 circled) 1 2 3 4 5 6 7 8 9 10

(MN circled) pH, Conductance 1 2 3 4 5 6 7 8 9 10
- (Cl, SO_4, Total Alk circled) (1 2 3 circled) 1 2 3 4 5 6 7 8 9 10
- HCO_3 / CO_3 1 2 3 4 5 6 7 8 9 10
- Cr^{+6} 1 2 3 4 5 6 7 8 9 10

OG Oil & Grease 1 2 3 4 5 6 7 8 9 10

Chain-of-Custody	BOTTLE / TESTS	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
		1) [signature]	[signature]	10-29-01 13:30
		2)		

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

SAFETY INFORMATION
(MUST BE COMPLETED PRIOR TO SAMPLE SUBMITTAL)

1	Are samples expected to contain cyanide (CN)? If yes, at what level? _____	YES	(NO)
2	Are samples expected to be flamable?	YES	(NO)
3	Are samples expected to be acidic (pH < 5)? acidified GA + MA C2	(YES)	NO
4	Are samples expected to be caustic (pH > 8)?	YES	(NO)
5	Are samples expected to be a Biohazard?	YES	(NO)
6	Are samples expected to be reactive with water or acid?	YES	(NO)
7	Are samples expected to be radioactive?	YES	(NO)
8	Are samples expected to contain dioxin?	YES	(NO)
9	Are samples expected to be explosive?	YES	(NO)

10 List additional suspected hazard information.

SOS ANALYTICAL

3188 Lafranier Road
Traverse City, MI 49686
Phone 231-946-6767
Fax 231-946-8741
www.sosanalytical.com

COMPANY:	BALL ENVIRONMENTAL	SOS PROJECT NO:	012192
		SAMPLED BY:	C. GROBBEL/BALL ENV
NAME:	BRAD BOALES		
PROJECT NO:	1001-21		
WSSN:		DATE SAMPLED:	7/17/01
WELL PERMIT:		TIME SAMPLED:	
TAX ID:			
LOCATION:	MUNROE ST	SAMPLE MATRIX:	WATER
		DATE RECEIVED:	7/17/01
		TIME RECEIVED:	8:55 AM
	MI		
COUNTY:	GRAND TRAVERSE		
TWP:	WHITEWATER		

INORGANICS/WET CHEMISTRY

No:	Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
SAMPLE ID: WS-1 (DITCH)							
1	BOD 5-DAY EPA 405.1	**					
1	CHLORIDE EPA 325.2	19,400	500	mg/L (PPM)	SS	7/17/01	
1	CONDUCTIVITY SM2510-B	75,000	100	uS/cm	JK	7/23/01	
1	pH EPA 150.1	3.8	+/- 0.1	s.u.	JK	7/17/01	
SAMPLE ID: WS-2 (OUTFALL)							
2	BOD 5-DAY EPA 405.1	**					
2	CHLORIDE EPA 325.2	15,800	500	mg/L (PPM)	SS	7/17/01	
2	CONDUCTIVITY SM2510-B	69,000	100	uS/cm	JK	7/23/01	
2	pH EPA 150.1	4.1	+/- 0.1	s.u.	JK	7/17/01	

**INVALID - PH TO LOW.

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: _____
KIRK L. CHASE
CHEMIST / VICE PRESIDENT

SOS analytical

CUSTO Y TRANSFER RECORD

Note: This is a four part form, please print using pen, pressing firmly - no dittos. Thank you.

3188 Lafranier ■ Traverse City, Michigan 49686
(231) 946-6767 ■ FAX (231) 946-8741
email: sosan@gtii.com

WSSN/Project No.	Site Address	Owner/Company Name
1001-21	Munroe St, Whitewater Twp., G Traverse Co.	Brad Boals

SAMPLER

Name of Sampler	Company
C. Grobbel	Ball Environmental Assoc(s).

ANALYSIS INFORMATION

BOD
Conductivity
Chloride
pH

Sample Point (Identification)	Sample Date	Sample Type	Sample Size	Rush Sample	No. of Containers						Other Analysis Required?
WS-1 (ditch)	7/17/01	W		No		X	X	X	X		
WS-2 (outfall)	7/17/01	W		No		X	X	X	X		

BOD Invalid - do not count

MISC. INFORMATION

7-23-01

QUOTE # _____ **TEMPERATURE RECEIVED** _____

INVOICE TO: Ball Environmental Assoc(s)
PO Box 64
Lake Leelanau, MI
49653

RESULTS TO: (Include Fax # and Phone #)

E-mail: bea@freeway.net E mail please

If any samples are rush please indicate above. **RUSH DUE DATE:** _____

DELIVERED BY:

Relinquished by	Date	Time	Received By	Date	Time
Christopher Grobbel	7/17/01				
			Received in Lab: Justin Mulvey	Date 7/17	Time 1:55

~~5~~ → Williamsburg receiving G.T. Co

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

LAB ORDER # 01-11-231 MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE		ACCEPT HT CODES? YES / NO
WMD	Cadillac	Janice Heuer	330	47006
LOCATION SAMPLED / SITE ID NUMBER			INDEX ~~PCA~~	~~PROJECT~~ PLA PH

~~Janice Heuer~~ Boats Wells

COLLECTED BY	PHONE	ADDITIONAL REPORT
Janice Heuer	231) 775-3960 ext 6203	TO ATTENTION OF
OVERFLOW CONTRACT LAB (Required for ERD)		AT (ADDRESS) (If different than above office)

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	COMMENTS
1	10091 Munro - S1	11/26/01	12:50	
2	10115 Munro - S2	"	1:25	
3	10125 Munro - S3	"	1:30	
4				
5				
6				
7				
8				
9				
10				

ORGANIC

VOA VOLATILES (624/8260)
- Full List 1 2 3 4 5 6 7 8 9 10
- BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

ON PESTICIDES/PCBS (608/8081/8082)
- Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
- Pesticides only 1 2 3 4 5 6 7 8 9 10
- PCBs only 1 2 3 4 5 6 7 8 9 10

****** NPDES ONLY******
- Scan 3 (NPDES Only) 1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (625/8270)
- BNAs 1 2 3 4 5 6 7 8 9 10
- PNAs only 1 2 3 4 5 6 7 8 9 10
- BNs only 1 2 3 4 5 6 7 8 9 10
- ACIDs only 1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS
- Library Search (Qualitative)
  - Volatiles 1 2 3 4 5 6 7 8 9 10
  - Semivolatiles 1 2 3 4 5 6 7 8 9 10
- Other _____ 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

- DO Diss Oxygen 1 2 3 4 5 6 7 8 9 10
- GN NO_2, o-Phos 1 2 3 4 5 6 7 8 9 10
- Residue SS 1 2 3 4 5 6 7 8 9 10
- Residue TDS 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- BOD Tot 5 day 1 2 3 4 5 6 7 8 9 10
- BOD Carb 5 day 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- CA Chlorophyll 1 2 3 4 5 6 7 8 9 10
- GA COD 1 2 3 4 5 6 7 8 9 10
- TOC 1 2 3 4 5 6 7 8 9 10
- NO3 + NO2, NH3 1 2 3 4 5 6 7 8 9 10
- KJEL-N, Tot P 1 2 3 4 5 6 7 8 9 10
- _____ 1 2 3 4 5 6 7 8 9 10
- GG Phenolics 1 2 3 4 5 6 7 8 9 10
- GP Phenolics (DPRES) 1 2 3 4 5 6 7 8 9 10
- GB Total CN 1 2 3 4 5 6 7 8 9 10
- Amenable CN 1 2 3 4 5 6 7 8 9 10

INORGANIC

- MA Total Metals 1 2 3 4 5 6 7 8 9 10
- MAD Diss-Field Filtered 1 2 3 4 5 6 7 8 9 10
- MD Diss-Lab Filtered 1 2 3 4 5 6 7 8 9 10

Quantification Limit	High	Low
MICH TEN METALS (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)	1 2 3 4 5 6 7 8 9 10	
Fe Co Li Mn	1 2 3 4 5 6 7 8 9 10	
Al Be Mo Ti V	1 2 3 4 5 6 7 8 9 10	
B Sr	1 2 3 4 5 6 7 8 9 10	
Ni - Nickel	1 2 3 4 5 6 7 8 9 10	
Sb - Antimony	1 2 3 4 5 6 7 8 9 10	
Tl - Thallium	1 2 3 4 5 6 7 8 9 10	
Ca Mg Na K	1 2 3 4 5 6 7 8 9 10	
Hardness	1 2 3 4 5 6 7 8 9 10	

- MN pH, Conductance 1 2 3 4 5 6 7 8 9 10
- Cl, SO_4, Total Alk 1 2 3 4 5 6 7 8 9 10
- HCO_3, CO_3 1 2 3 4 5 6 7 8 9 10
- Cr^{+6} 1 2 3 4 5 6 7 8 9 10
- OG Oil & Grease 1 2 3 4 5 6 7 8 9 10

Chain-of-Custody	BOTTLE / TESTS	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
		1) Janice Heuer		10-29-01 15:30
		2)		

Williamsburg G.T. Co

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY (517) 335-9800

P.O. Box 30270
Lansing, MI 48909

Report To: Environmental Response Div.
District #6
120 W Chapin Street
Cadillac, MI 49601
Attn: CHANSY VONGPHASOUK
Total: $348.54

Lab Work Order # 0102095
Work Site ID: WILLIAMSBURG REC.&STORAGE
Matrix: Water
Received: 2/21/2001 **Reported:** 3/16/2001
Client: ER_CADILLAC **Number of Samples:** 2

TEST	UNITS	OUTFALL 1	SUMP 2
Alkalinity of Water	mg CaCO3/L	101	86
Alkalinity - Bicarbonate	mg CaCO3/L	101	86
Alkalinity - Carbonate	mg CaCO3/L	K 5	K 5
Ammonia	mg N/L	1.1	1.1
Chloride in Water	mg/L	166	QNS
COD - Titrimetric	mg/L	1900	2000
Conductivity of Water	umho/cm	1029	1215
Hex Chromium in Water	ug/L	INT	INT
Nitrate + Nitrite	mg N/L	K 0.1 DL	K 0.1 DL
Nitrite	mg N/L	K .1 DL HT	K .1 DL HT
Nitrogen - Kjeldahl	mg N/L	17	17
Ortho Phosphate	mg P/L	1.3 HT	1.7 HT
Phosphorus - Total	mg P/L	2.6	2.5
Solids - Suspended	mg/L	47	40
Solids - Total Dissolved	mg/L	1400	1900
Sulfate in Water	mg/L	176	QNS
TOC	mg/L	710 DL	720 DL

This is an original report: Louis C Utes Date: 2/28/01

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	PROCEDURE	NO: PD-13/Ver. 2
	LABORATORY SERVICES SECTION	DATE REV.:12/99

SUBJECT: Laboratory Result Remark Codes

EFFECTIVE DATE: December1999

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e., substance, if present, is below detection limit.
L	actual value is known to be greater than the value given.
T	value reported is less than criteria of detection.
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	QC indicated possible low recovery. Actual level may be higher.
LL	QC indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exist.
RB	reagent blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by:

Bob Avery, Laboratory Director 11/30/99
Date

DEQ

'CHIGAN DEPT. OF ENVIRONMENTAL QUAL''Y
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

LAB ORDER # 01-01-027

MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES / NO
SWQD	Cadillac District	Chansy Vanophasouk 231-775-3960 ext 6216	

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA	PROJECT	PH
WRRS-001	37400	42600	480043	01

COLLECTED BY	PHONE	ADDITIONAL REPORT
CMA CN	(231) 775-3960 ext 6216	TO ATTENTION OF
OVERFLOW CONTRACT LAB (Required for ERD)		AT (ADDRESS) (If different than above office)

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	COMMENTS
1	Station 1	~~1/3/01~~ 1-3-01	10:00	
2				
3				
4				
5				
6				
7				
8				
9				
10				

ORGANIC

VOA VOLATILES (624/8260)
Full List 1 2 3 4 5 6 7 8 9 10
BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

ON PESTICIDES/PCBS (608/8081/8082)
Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
Pesticides only 1 2 3 4 5 6 7 8 9 10
PCBs only 1 2 3 4 5 6 7 8 9 10
****** NPDES ONLY******
Scan 3 (NPDES Only) 1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (625/8270)
BNAs 1 2 3 4 5 6 7 8 9 10
PNAs only 1 2 3 4 5 6 7 8 9 10
BNs only 1 2 3 4 5 6 7 8 9 10
ACIDs only 1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS
Library Search (Qualitative)
Volatiles 1 2 3 4 5 6 7 8 9 10
Semivolatiles 1 2 3 4 5 6 7 8 9 10
Other
_____ 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

DO Diss Oxygen 1 2 3 4 5 6 7 8 9 10

GN NO_2, o-Phos 1 2 3 4 5 6 7 8 9 10
Residue SS 1 2 3 4 5 6 7 8 9 10
Residue TDS 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10
~~BOD Tot 5-day~~ 1 2 3 4 5 6 7 8 9 10
~~BOD Carb 5-day~~ 1 2 3 4 5 6 7 8 9 10
_____

CA Chlorophyll 1 2 3 4 5 6 7 8 9 10

GA COD 1 2 3 4 5 6 7 8 9 10
TOC 1 2 3 4 5 6 7 8 9 10
NO3 + NO2, NH3 1 2 3 4 5 6 7 8 9 10
KJEL N, Tot P 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10

GG Phenolics 1 2 3 4 5 6 7 8 9 10
GP Phenolics (NPDES) 1 2 3 4 5 6 7 8 9 10

GB Total CN 1 2 3 4 5 6 7 8 9 10
Amenable CN 1 2 3 4 5 6 7 8 9 10

INORGANIC

MA Total Metals 1 2 3 4 5 6 7 8 9 10
MAD Diss-Field Filtered 1 2 3 4 5 6 7 8 9 10
MD Diss-Lab Filtered 1 2 3 4 5 6 7 8 9 10

Quantification Limit	High	Low
MICH TEN METALS	1 2 3 4 5 6 7 8 9 10	
(As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)		
Fe Co Li Mn	1 2 3 4 5 6 7 8 9 10	
Al Be Mo Ti V	1 2 3 4 5 6 7 8 9 10	
B Sr	1 2 3 4 5 6 7 8 9 10	
Ni - Nickel	1 2 3 4 5 6 7 8 9 10	
Sb - Antimony	1 2 3 4 5 6 7 8 9 10	
Tl - Thallium	1 2 3 4 5 6 7 8 9 10	
Ca Mg Na K	1 2 3 4 5 6 7 8 9 10	
Hardness	1 2 3 4 5 6 7 8 9 10	

MN, pH, Conductance 1 2 3 4 5 6 7 8 9 10
Cl, SO_4, Total Alk 1 2 3 4 5 6 7 8 9 10
HCO_3, CO_3 1 2 3 4 5 6 7 8 9 10
Cr^{+6} 1 2 3 4 5 6 7 8 9 10

OG Oil & Grease 1 2 3 4 5 6 7 8 9 10

Chain-of-Custody	BOTTLE / TESTS	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
		1) UPS	Bryan Delpaush	1/9/01 945
		2)		

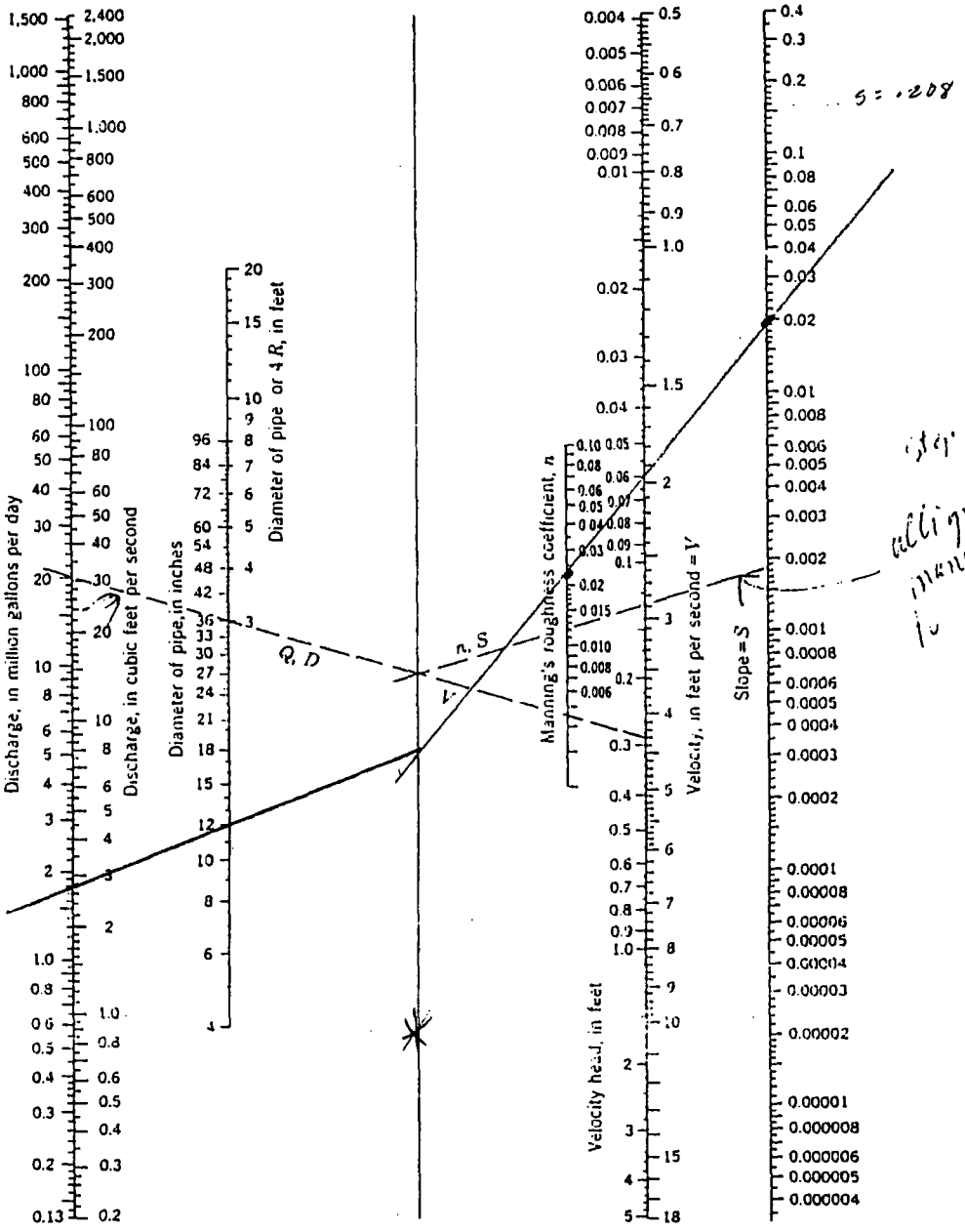

FIGURE 22.—Alignment chart for Manning formula for pipe flow.

in which the nomenclature is basically the same as that used in Equation 13 and C is a coefficient related to roughness.

The formula is used widely for pressure-conduit or pipe flow, although it is equally applicable to open-channel conditions. Published values for C have come largely from pipe-flow experiments, while many of the reported n values are from open-channel flow tests. The Hazen-Williams

Chart 2

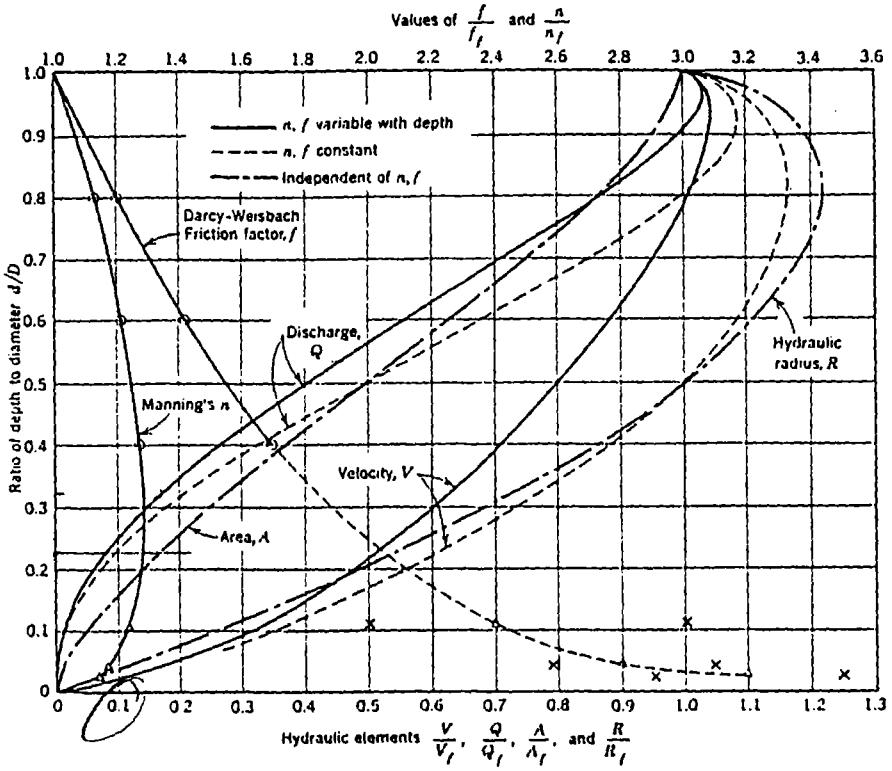

FIGURE 24.—Hydraulic-elements graph for circular sewers.

et al. (22). Graphs for sewers of other than circular cross section may be developed by the same general method.

Most of the hydraulic-elements graphs in common use have been prepared on the assumption that the Manning n does not change with the depth of flow for the particular conduit shape. Nonetheless, many experimenters have observed a variation of n with depth of flow. The experiments of Wilcox (23) and of Yarnell and Woodward (24) show that the value of n for a pipe flowing partly full is greater than for the full pipe; and the average n values for 824 experiments are as indicated by the curve through the points marked by circles in Figure 24. A similar curve for the Darcy-Weisbach fraction factor f also is shown in the same figure.

The relation between the two friction coefficients is

$$\frac{n}{n_f}=\left(\frac{R}{R_f}\right)^{1/6}\left(\frac{f}{f_f}\right)^{1/2} \qquad \text{.....21}$$

which is similar to Equation 19.

The points in Figure 24 marked by triangles and x's were estimated from the measurements made by Johnson (25) in large Louisville, Ky., sewers flowing partly full. Since individual values of f/f_f in the experiments of Wilcox and of Yarnell and Woodward varied widely from the average for a particular value of d/D, the reliability of the averages used in Figure 24 may be questioned. Tests by Schmidt (26) on a large

Pages 99-101 Exemption 6

TRACE Analytical Laboratories, Inc.
2241 Black Creek Road • Muskegon, MI 49444-2673 • Phone 231-773-5998 • Fax 231-773-6537 • E-Mail: TraceAnalytical@mad.scientist.com

COPY

ATTACHMENT 1

February 15, 2000

Ms. Diane Lundin
Environmental Solutions, Inc.
P.O. Box 2127
Traverse City, MI 49685-2127

RE: Trace ID Y858

Dear Mr. Lundin:

Enclosed are the analytical results associated with your Project #1021.

This information was examined through Trace's validation process to ensure that all requirements for quality and completeness were satisfied. All reported analytical results were obtained in accordance with the methods referenced on the reports. Every practical effort was made to meet the reporting limit specifications for this work. However, if there are exceptions, they will be noted at the bottom of the appropriate report page.

Thank you for working with Trace. If you have questions regarding this data, please contact Ann Preston, our client services manager, at (231) 773-5998, ext. 224.

Sincerely,

Ray V. Buhl
Laboratory Manager

RVB/bmc
Enclosures

TRACE Analytical Laboratories, Inc.
2241 Black Creek Road • Muskegon, MI 49444-2673 • Phone 231-773-5998 • Fax 231-773-6537 • E-Mail: TraceAnalytical@mad.scientist.com

Ms. Diane Lundin
Environmental Solutions, Inc.
P.O. Box 2127
Traverse City, MI 49685-2127

TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/15/00
ANALYST: cy

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	TOTAL PHOSPHORUS mg/L	REPORTING LIMIT mg/L	METHOD NUMBER
01	Pitting Sample 1	2.6	* 0.50	EPA 365.2
02	Pitting Sample 2	3.2	* 0.50	EPA 365.2
03	Pitting Sample 3	2.2	* 0.50	EPA 365.2
04	Pitting Sample 4	3.1	* 0.50	EPA 365.2

* Reporting limit was raised due to dilution.

U = Undetected at reporting limits

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Traverse City, MI 49685-2127

TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/03/00
ANALYST: uh/dj

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	NITRATE NITROGEN mg/L	REPORTING LIMIT mg/L	METHOD NUMBER
01	Pitting Sample 1	1.9	0.015	EPA 300.0
02	Pitting Sample 2	1.8	0.015	EPA 300.0
03	Pitting Sample 3	1.8	0.015	EPA 300.0
04	Pitting Sample 4	1.8	0.015	EPA 300.0

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TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/03/00
ANALYST: uh/dj

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	NITRITE NITROGEN mg/L	REPORTING LIMIT mg/L	METHOD NUMBER
01	Pitting Sample 1	0.027	0.015	EPA 300.0
02	Pitting Sample 2	0.025	0.015	EPA 300.0
03	Pitting Sample 3	0.023	0.015	EPA 300.0
04	Pitting Sample 4	0.025	0.015	EPA 300.0

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Ms. Diane Lundin
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P.O. Box 2127
Traverse City, MI 49685-2127

TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/04/00
ANALYST: uh/dj

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	FLUORIDE mg/L	REPORTING LIMIT mg/L	METHOD NUMBER
01	Pitting Sample 1	0.30	0.10	EPA 300.0
02	Pitting Sample 2	0.36	0.10	EPA 300.0
03	Pitting Sample 3	0.28	0.10	EPA 300.0
04	Pitting Sample 4	0.39	0.10	EPA 300.0

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TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/04/00
ANALYST: uh/dj

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	CHLORIDE mg/L	REPORTING LIMIT mg/L	METHOD NUMBER
01	Pitting Sample 1	260	* 2.0	EPA 300.0
02	Pitting Sample 2	340	* 2.0	EPA 300.0
03	Pitting Sample 3	190	* 2.0	EPA 300.0
04	Pitting Sample 4	350	* 2.0	EPA 300.0

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TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/04/00
ANALYST: uh/dj

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	SULFATE mg/L	REPORTING LIMIT mg/L	METHOD NUMBER
01	Pitting Sample 1	49	* 10	EPA 300.0
02	Pitting Sample 2	44	* 10	EPA 300.0
03	Pitting Sample 3	49	* 10	EPA 300.0
04	Pitting Sample 4	51	* 10	EPA 300.0

* Reporting limit was raised due to dilution.

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P.O. Box 2127
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TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/03/00
ANALYST: js

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	pH	REPORTING LIMIT	METHOD NUMBER
01	Pitting Sample 1	6.73	NA	EPA 150.1
02	Pitting Sample 2	6.12	NA	EPA 150.1
03	Pitting Sample 3	6.98	NA	EPA 150.1
04	Pitting Sample 4	6.23	NA	EPA 150.1

U = Undetected at reporting limits

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Traverse City, MI 49685-2127

TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/04/00
ANALYST: cy

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	SPECIFIC CONDUCTANCE µmhos/cm	REPORTING LIMIT µmhos/cm	METHOD NUMBER
01	Pitting Sample 1	1400	200	EPA 120.1
02	Pitting Sample 2	1700	200	EPA 120.1
03	Pitting Sample 3	1200	200	EPA 120.1
04	Pitting Sample 4	1800	200	EPA 120.1

U = Undetected at reporting limits

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Traverse City, MI 49685-2127

TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/07/00
ANALYST: uh

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	AMMONIA NITROGEN mg/L	REPORTING LIMIT mg/L	METHOD NUMBER
01	Pitting Sample 1	1.2	* 0.050	EPA 350.1
02	Pitting Sample 2	1.4	* 0.050	EPA 350.1
03	Pitting Sample 3	0.91	* 0.050	EPA 350.1
04	Pitting Sample 4	1.5	* 0.050	EPA 350.1

* Reporting limit was raised due to dilution.

U = Undetected at reporting limits

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Ms. Diane Lundin
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Traverse City, MI 49685-2127

TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/09/00
ANALYST: uh

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	BOD mg/L	REPORTING LIMIT mg/L	METHOD NUMBER
01	Pitting Sample 1	** 900	* 400	EPA 405.1
02	Pitting Sample 2	** 1200	* 400	EPA 405.1
03	Pitting Sample 3	** 700	* 400	EPA 405.1
04	Pitting Sample 4	** 1300	* 400	EPA 405.1

* Reporting limit was raised due to dilution.

** The sample result and reporting limit must be considered estimated. The analysis was performed beyond the EPA established 24 hour hold time.

U = Undetected at reporting limits

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Ms. Diane Lundin
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P.O. Box 2127
Traverse City, MI 49685-2127

TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/08/00
ANALYST: cy

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	BICARBONATE ALKALINITY as $CaCO_3$ mg/L	REPORTING LIMIT mg/L	METHOD NUMBER
01	Pitting Sample 1	97	10	EPA 310.1
02	Pitting Sample 2	92	10	EPA 310.1
03	Pitting Sample 3	88	10	EPA 310.1
04	Pitting Sample 4	92	10	EPA 310.1

U = Undetected at reporting limits

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Ms. Diane Lundin
Environmental Solutions, Inc.
P.O. Box 2127
Traverse City, MI 49685-2127

TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/08/00
ANALYST: cy

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	CARBONATE ALKALINITY as $CaCO_3$ mg/L	REPORTING LIMIT mg/L	METHOD NUMBER
01	Pitting Sample 1	U	10	EPA 310.1
02	Pitting Sample 2	U	10	EPA 310.1
03	Pitting Sample 3	U	10	EPA 310.1
04	Pitting Sample 4	U	10	EPA 310.1

U = Undetected at reporting limits

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Traverse City, MI 49685-2127

TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/07/00
ANALYST: uh/dj

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	TOTAL INORGANIC NITROGEN mg/L	REPORTING LIMIT mg/L	METHOD NUMBER
01	Pitting Sample 1	3.1	0.040	EPA 300.0/350.1
02	Pitting Sample 2	3.2	0.040	EPA 300.0/350.1
03	Pitting Sample 3	2.8	0.040	EPA 300.0/350.1
04	Pitting Sample 4	3.4	0.040	EPA 300.0/350.1

U = Undetected at reporting limits

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P.O. Box 2127
Traverse City, MI 49685-2127

TRACE ID: Y858
REPORT DATE: 02/15/00
ANALYSIS DATE: 02/09/00
ANALYST: sd

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TRACE SAMPLE NO.	SAMPLE ID	HARDNESS mg/L	REPORTING LIMIT mg/L	METHOD NUMBER
01	Pitting Sample 1	580	2.0	SM 2340B
02	Pitting Sample 2	670	2.0	SM 2340B
03	Pitting Sample 3	510	2.0	SM 2340B
04	Pitting Sample 4	710	2.0	SM 2340B

U = Undetected at reporting limits

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Ms. Diane Lundin
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P.O. Box 2127
Traverse City, MI 49685-2127

TRACE ID: Y858-01
REPORT DATE: 02/15/00
DIGESTION DATE: 02/04/00
ANALYST: sd

CLIENT ID: Proj. #1021

SAMPLE ID: Pitting Sample 1

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TOTAL METALS	RESULT mg/L	REPORTING LIMIT mg/L	ANALYZED	METHOD NUMBER
Calcium	200	1.0	02/09/00	EPA 6010
Iron	0.17	0.020	02/09/00	EPA 6010
Magnesium	22	1.0	02/09/00	EPA 6010
Potassium	32	0.10	02/09/00	EPA 6010
Sodium	88	1.0	02/09/00	EPA 6010

U = Undetected at reporting limits

TRACE Analytical Laboratories, Inc.
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Ms. Diane Lundin
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P.O. Box 2127
Traverse City, MI 49685-2127

TRACE ID: Y858-02
REPORT DATE: 02/15/00
DIGESTION DATE: 02/04/00
ANALYST: sd

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

SAMPLE ID: Pitting Sample 2

TOTAL METALS	RESULT mg/L	REPORTING LIMIT mg/L	ANALYZED	METHOD NUMBER
Calcium	230	1.0	02/09/00	EPA 6010
Iron	0.17	0.020	02/09/00	EPA 6010
Magnesium	22	1.0	02/09/00	EPA 6010
Potassium	46	0.10	02/09/00	EPA 6010
Sodium	120	1.0	02/09/00	EPA 6010

U = Undetected at reporting limits

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Environmental Solutions, Inc.
P.O. Box 2127
Traverse City, MI 49685-2127

TRACE ID: Y858-03
REPORT DATE: 02/15/00
DIGESTION DATE: 02/04/00
ANALYST: sd

CLIENT ID: Proj. #1021

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

SAMPLE ID: Pitting Sample 3

TOTAL METALS	RESULT mg/L	REPORTING LIMIT mg/L	ANALYZED	METHOD NUMBER
Calcium	170	1.0	02/09/00	EPA 6010
Iron	0.18	0.020	02/09/00	EPA 6010
Magnesium	22	1.0	02/09/00	EPA 6010
Potassium	24	0.10	02/09/00	EPA 6010
Sodium	70	1.0	02/09/00	EPA 6010

U = Undetected at reporting limits

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Traverse City, MI 49685-2127

TRACE ID: Y858-04
REPORT DATE: 02/15/00
DIGESTION DATE: 02/04/00
ANALYST: sd

CLIENT ID: Proj. #1021

SAMPLE ID: Pitting Sample 4

SAMPLE DATE: 02/03/00
SAMPLE RECEIVED: 02/03/00
SAMPLE TYPE: Water
SAMPLER: ch/Williamsburg

TOTAL METALS	RESULT mg/L	REPORTING LIMIT mg/L	ANALYZED	METHOD NUMBER
Calcium	250	1.0	02/09/00	EPA 6010
Iron	0.16	0.020	02/09/00	EPA 6010
Magnesium	22	1.0	02/09/00	EPA 6010
Potassium	40	0.10	02/09/00	EPA 6010
Sodium	120	1.0	02/09/00	EPA 6010

U = Undetected at reporting limits

Analytical Laboratories, Inc.
2241 Black Creek Road • Muskegon, MI 49444-2673
Phone 231-773-5998 • Fax 231-773-6537

ANALYTICAL SERVICES AUTHORIZATION
CHAIN-OF-CUSTODY RECORD

2/17

TRACE ID NO. 4858

Page 1 of 2

PLEASE COMPLETE STEPS 1 THRU 3. TRACE PERSONNEL WILL COMPLETE SECTIONS SHADED BLUE.

STEP 1 Report Results To:

Client Name: [illegible] ENVIRONMENTAL SOLUTIONS, INC.
Contact Person: DIANE LUNDIN
Mailing Address: 1023 BUSINESS PARK DRIVE
City, State, Zip Code: TRAVERSE CITY, MICHIGAN 49685
Phone: (231) 941-2025 Fax: (231) 941-8752
Email Address: dianel@esi-tc.com
Client Job #: 1021 P.O. #: Trace Quote #:
Sampled By: CHRIS HUBBELL WILLIAMSBURG RECEIVING

For Use by TRACE Personnel Only

Logged By: Checked By:
Received on ice: Yes No
Cooler Temp (°C): ph Checked: Yes No
Volatiles Preserved: HCl MeOH En Core No Metals Pres: Yes No

Step 2 / Request for Analytical Services

Regulatory Requirements: MERA TMDL's ☐ RCRA ☐ NPDES ☐ USACE ☐ Wisconsin ☐
Turnaround Requirements: Standard ☒ * 5 Day (RUSH) ☐ * 2-4 Day (RUSH) ☐ * 24 Hour (RUSH) ☐ * Requires prior approval
Matrix Key: DW = Drinking Water; S = Soil; SL = Sludge; W = Water; A = Air; O = Oil; X = Other

TRACE NO.	DATE TAKEN	TIME TAKEN	METALS FIELD FILTERED	VOLATILES PRESERVED	CLIENT SAMPLE ID	MATRIX	NUMBER OF CONTAINERS
01	2/3	8:00 A			PITTING SAMPLE 1	W	1
02	2/3	9:30 A			PITTING SAMPLE 2		
03	2/3	11:00 A			PITTING SAMPLE 3		
04	2/3	12:30 P			PITTING SAMPLE 4		

ANALYSIS REQUESTED: Sodium, Mg, K; Chloride, Bicarb; Sulfate, F; Phosphorous; Total Inorg. Nitrogen; Ammonia; Nitrate; Nitrite; Hardness; Calcium; Cond.; BOD; Iron; TSS

REMARKS: SEE ATTACHED LIST FOR ANALYSIS REQUESTED, DETECTION LIMITS, AND METHODS REQUESTED, FOR EACH SAMPLE.

Possible Health Hazard

STEP 3 Chain of Custody

Item #	RELEASED BY	RECEIVED BY	DATE	TIME
01	1) [signature]	[signature]	2/3/00	2:15
	3)			

Item #	RELEASED BY	RECEIVED BY	DATE	TIME
	2)			
	4)			

In executing this agreement, the client acknowledges acceptance of the terms of the agreement as listed on the reverse side.

meeting 12/13/05 WRS GTC

SOS ANALYTICAL

4125 Cedar Run Road, Suite B
Traverse City, MI 49684
voice: (231) 946-6767
fax: (231) 946-8741

SOSanalytical.com

COMPANY: CHERRY BLOSSOM, L.L.C.
NAME:
PROJECT NO: 02061
WSSN:
WELL PERMIT:
TAX ID:
LOCATION: CHERRY BLOSSOM LLC
WILLIAMSBURG
MI
COUNTY:
TWP:

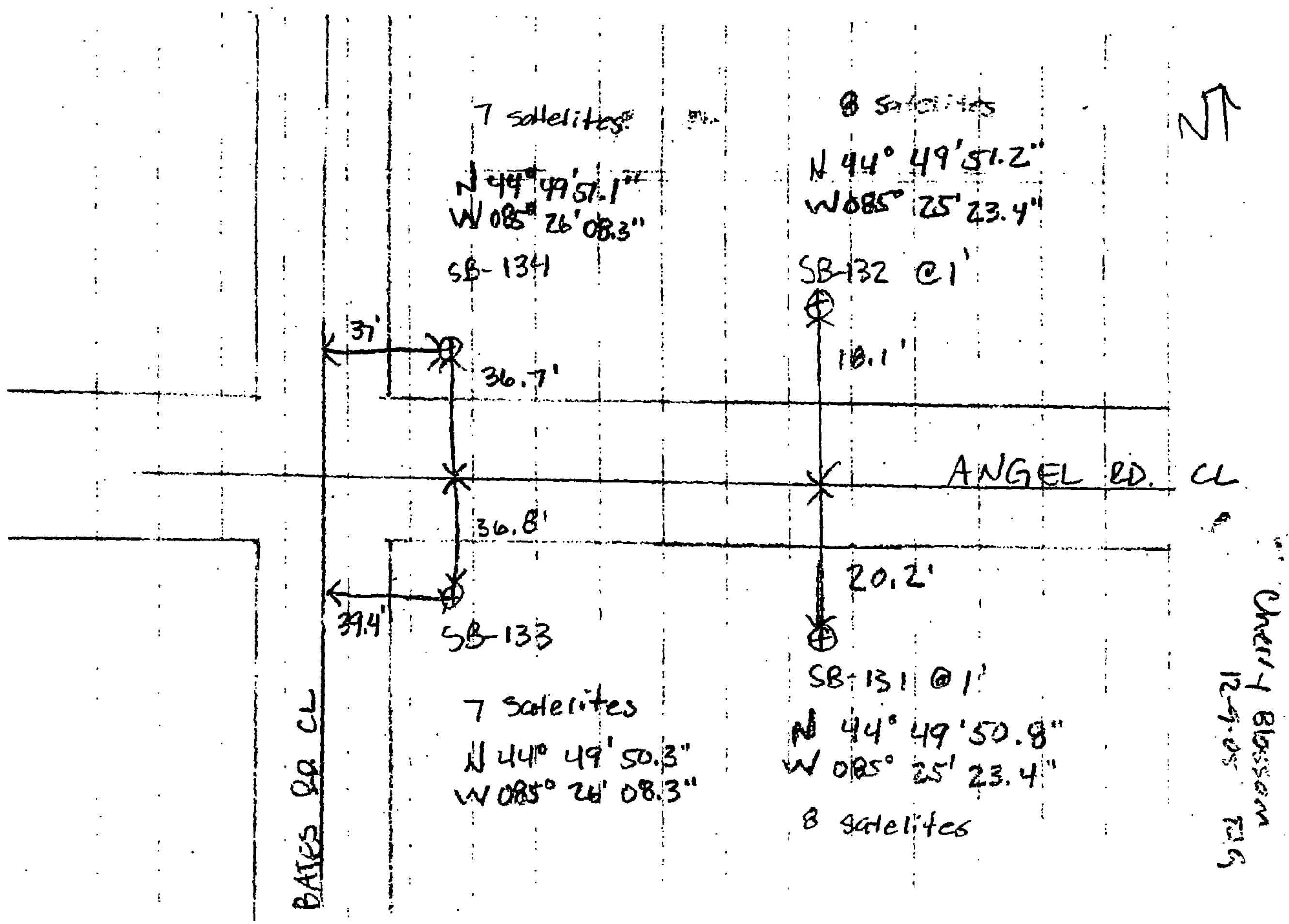
SOS PROJECT NO: 055691
SAMPLED BY: TIM GATES/ISE
DATE SAMPLED: 12/9/05
TIME SAMPLED:
SAMPLE MATRIX: SOIL
DATE RECEIVED: 12/9/05
TIME RECEIVED: 4:55 PM
*CHLORIDE RESULTS REPORTED ON A DRY WEIGHT BASIS

INORGANICS

No:	Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
SAMPLE ID: SB-131 @ 1'							
1	CHLORIDE EPA 9251	127	20	mg/Kg (PPM)	KMC	12/13/05	
1	SOLID, PERCENT	92.05		Percent (%)	CG	12/12/05	
SAMPLE ID: SB-132 @ 1'							
2	CHLORIDE EPA 9251	3,230	50	mg/Kg (PPM)	KMC	12/13/05	
2	SOLID, PERCENT	49.64		Percent (%)	CG	12/12/05	
SAMPLE ID: SB-133 @ 1'							
3	CHLORIDE EPA 9251	255	20	mg/Kg (PPM)	KMC	12/13/05	
3	SOLID, PERCENT	89.97		Percent (%)	CG	12/12/05	
SAMPLE ID: SB-134 @ 1'							
4	CHLORIDE EPA 9251	1,950	20	mg/Kg (PPM)	KMC	12/13/05	
4	SOLID, PERCENT	88.80		Percent (%)	CG	12/12/05	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: _____
SHANNA SHEA
LAB MANAGER



7 satellites
N 44° 49' 51.1"
W 085° 26' 08.3"
SB-134
8 satellites
N 44° 49' 51.2"
W 085° 25' 23.4"
SB-132 @ 1'
37'
36.7'
18.1'
ANGEL RD. CL
36.8'
20.2'
39.4'
SB-133
SB-131 @ 1'
7 satellites
N 44° 49' 50.3"
W 085° 26' 08.3"
N 44° 49' 50.8"
W 085° 25' 23.4"
8 satellites
BATES RD CL
Cherry Blossom
12-9-05

SB-131 Cherry Blossom 12-9-05 T.

0"-6" Field Grass/Topsoil

6"-12" Sand, fine, trace clay, soft, brown, moist

SB-132

Same as SB-131

SB-133

0"-6" Field Grass/Topsoil

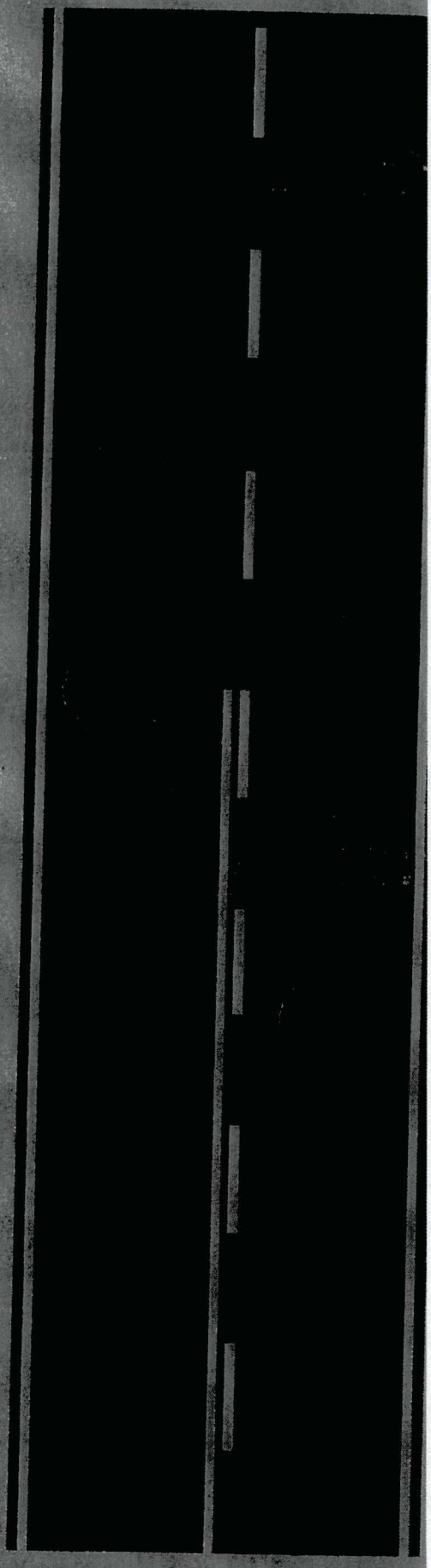
6"-12" Sand, fine, trace silt, soft, brown, moi

SB-134

Same as SB-133

Prepared by
Public Sector Consultants, Inc.

For
Michigan Department of Transportation



THE USE OF SELECTED DEICING MATERIALS ON MICHIGAN ROADS: Environmental and Economic Impacts

December 1993

Exhibit 2.1: Tons of Road Salt Used per Winter on County and Municipal Roads under the Jurisdiction of the MDOT (in thousands)

District	1983–84	1984–85	1985–86	1986–87	1987–88	1988–89	1989–90	1990–91	1991–92
1	25.2	24.7	27.4	20.4	27.7	32.6	30.6	31.1	31.0
2	15.9	19.0	18.8	15.1	20.2	20.1	19.2	18.0	23.7
3	22.3	24.7	27.0	17.3	25.6	29.1	38.8	32.9	41.6
4	26.7	26.2	31.0	21.5	34.0	39.3	46.2	33.0	41.4
5	53.6	49.3	70.7	30.1	50.8	52.2	65.7	42.5	63.8
6	39.4	46.1	58.4	37.4	48.7	46.0	61.1	51.9	51.9
7	44.7	44.5	51.8	23.8	42.6	40.1	61.3	43.9	50.5
8	46.0	43.1	53.4	27.9	40.0	36.4	55.3	42.9	45.2
Metro Detroit	143.4	143.9	139.0	79.4	112.1	104.1	157.1	132.6	130.7
TOTAL	417.2	421.6	477.4	272.9	401.7	399.9	535.3	429.0	480.0

SOURCE: Michigan Department of Transportation.

recommendations and the use of controlling devices, there has been no overall reduction in road salt use.[1]

Road salt costs $20–40 per ton.

Road Salt Storage

Deicing chemicals can contaminate soil, surface water, and groundwater. Road salt was at one time stored uncontained and without protection from precipitation; road salt contamination has been identified at at least 62 salt storage facilities operated by the MDOT, municipalities, or county authorities.[2] Most MDOT road salt now is stored in sheds constructed for that specific purpose. Additionally, efforts are made to ensure that trucks are loaded in a contained area, which reduces the amount of road salt released to areas adjacent to storage facilities. The MDNR Waste Management Division recently surveyed 122 agencies that store or use salt or brine for road deicing. Of the 14 MDOT facilities surveyed, some were not in compliance with one or more storage requirements; that is, they had failed to develop a pollution incident prevention plan, had not obtained a permit for surface water or groundwater discharge, did not properly contain floor drain/truck wash water, and/or they store salt/sand on impervious pads. However, it is the MDOT's goal to achieve compliance with all MDNR salt storage requirements.[3]

The MDOT provides to contracting counties and local governments funds to construct containers for road salt; the amount of funding depends on the five-year average percentage of stored road salt used by the localities on state roads. For example, if, over five years, 50 percent of the road salt stored in a locality's facility is used on state trunk lines, the department provides 50 percent of the cost of constructing containment facilities. (At facilities not under the jurisdiction of the MDOT, containment varies widely.)

Special Report 235

Highway Deicing

Comparing Salt and Calcium Magnesium Acetate

**Committee on the
Comparative Costs of Rock Salt and
Calcium Magnesium Acetate (CMA)
for Highway Deicing**

**Transportation Research Board
National Research Council
Washington, D.C. 1991**

and highways, such as multilane freeways, are typically treated most intensely, through higher application rates and more frequent treatment. Lower-priority streets and secondary roads are often left untreated for longer periods, or not treated at all (see Figure 2-2).

Official salt application rates for several states are listed in Table 2-1. Rates vary from state to state, although most are between 200 and 400 lb/lane-mi on high-priority highways. On medium-priority roads, coverage tends to be reduced or eliminated at night, and salt is mixed with abrasives to reduce salt use by at least 25 percent. These policies generally do not limit the frequency of application. As might be expected, northern states tend to have the highest annual loadings of salt because of their higher application frequencies. New York, Massachusetts, Michigan, New Hampshire, and Vermont report the highest annual salt loadings. Each averages more than 10 tons/lane-mi on state-maintained highways (Table 2-2).

Municipal highway agencies were not surveyed in this study. They are among the most generous users of road salt because of the emphasis placed on clearing bus lanes and commuter routes (TRB 1974). Toll authorities are also heavy salt users, because they are selling a service and do not wish to lose customers by allowing hazardous driving conditions or delays.

Storage

Salt storage facilities are usually located at highway maintenance yards as well as at other intermediate points along highways (see Figure 2-3). The location, size, and number of storage facilities often depend on the priority of the roads being treated and the incidence of special features, such as bridges and intersections that require more frequent salting.

When stored outside and exposed to precipitation, salt solution may run off and leach into surrounding soils and groundwater unless properly covered and drained. Accordingly, highway agencies increasingly store salt on impervious pads and in leakproof shelters, such as sheds, barns, or "beehive" domes that correspond to the salt pile's angle of repose. These buildings, which often cost upwards of $100,000 to build, can provide storage for more than 1,000 tons of salt. In recent years, some highway agencies have introduced high-capacity silos for gravity loading. Silos reduce the potential for spillage during handling while protecting the salt from exposure to moisture and humidity.

TABLE 2-1 OFFICIAL SALT USE POLICIES IN VARIOUS STATES

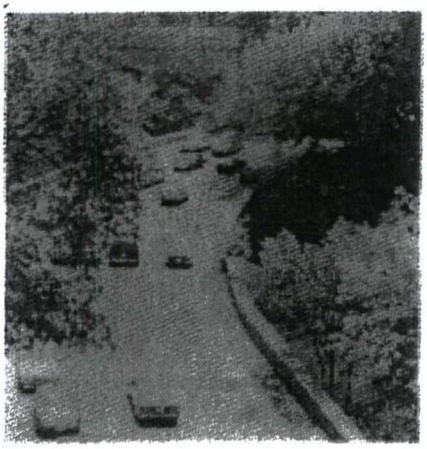
Region and State	Summary of General Policy
New England	
Connecticut	Salt applied at 215 lb/lane-mi on multilane roads; no more than 150 lb/lane-mi on two-lane state highways
Massachusetts	Salt applied at less than 300 lb/lane-mi on state highways
New Hampshire	Salt application guideline of 250 to 300 lb/lane-mi on state highways
Middle Atlantic	
Maryland	Salt application guideline of 300 to 500 lb/lane-mi on state highways
West Virginia	Salt application guideline of 100 to 250 lb/lane-mi, usually mixed with abrasives, except in cities
Great Lakes	
Michigan	Salt applied at 225 lb/lane-mi on primary highways. Salt and sand mixtures used on lower-priority roads, depending on storm temperature and severity
Ohio	Salt applied at 200 to 300 lb/lane-mi on Interstate and primary highways; 100 to 200 lb/lane-mi, with abrasives on secondary roads; no more than 100 to 200 lb/lane-mi on low-priority roads
Wisconsin	Salt application rates of 100 to 300 lb/lane-mi recommended; additional salt use restrictions related to pavement temperature in place
Plains	
Iowa	Salt applied at 150 lb/lane-mi (mixed with sand) on Interstates and other arterials; 100 lb/lane-mi on collectors; no salt used on local roads
Kansas	Salt applied at 100 to 250 lb/lane-mi (mixed with sand) on Interstates, freeways, and other roads with 2,500+ ADT; less on roads with 750 to 2,500 ADT; no salt used on roads with < 750 ADT
West	
Colorado	Salt only with abrasives; rates not defined
California	Salt applied at 500 lb/lane-mi on some mountain highways

NOTE: Although policies often identify an ideal salt application rate for equipment calibration, they seldom regulate the timing and frequency of applications. Application timing and frequency are typically determined by the maintenance engineer in charge during the storm. Data in the table are from states that responded to relevant questions in survey. ADT = average daily traffic.
SOURCE: TRB survey of state highway agencies.

SALT USE BY JURISDICTION AND REGION

Nationwide, there are more than 3.8 million mi of public highway and streets. Except for minor amounts of mileage on federal lands, practically all of these roads are maintained by state and local high-

4
Road Salt Impacts on the Environment



Hundreds of reports have been written during the past three decades documenting the impact of road salt on the environment. The literature clearly indicates that the impacts can be significant but depend on a wide range of factors unique to each site.

The emphasis of this chapter is on summarizing what is known about road salt's environmental effects on the basis of these reports. The effects discussed are those most frequently cited in the literature—damage to roadside vegetation, water, and soil. Because the significance of each effect varies by location, in the absence of detailed information it is not possible to quantify costs on a national basis. Instead, to help illustrate the discussion and provide some perspective on cost, the chapter concludes with several hypothetical cases.

VEGETATION

The adverse effects of salt on roadside vegetation have been known for some time. Incidents of vegetation injury were first reported in Minnesota during the 1950s, when trees along city boulevards started to show signs of salt-related decline (French 1959). At about this time the New Hampshire Highway Department reported the death and removal of nearly 14,000 trees along 3,700 mi of salt-treated highways (Sucoff 1975).

For many situations, however, redesign of roadsides is not practical. As a result, most highway agencies are faced with three options: acceptance of some salt-related damage to roadside vegetation, discontinuance or restriction of salt treatments in especially sensitive areas, or use of a deicing substitute with fewer side effects than salt (Hanes et al. 1970).

SURFACE WATER

In most parts of the country, fresh water contains low salt concentrations. Average chloride concentrations in freshwater lakes and rivers are 0 to 100 mg/L, and most concentrations are lower than 20 mg/L (Goldman and Horne 1983). However, salt and its components, sodium and chloride, can access fresh water through numerous sources. Seawater, which contains chloride concentrations of about 20 000 mg/L (Table 4-2), is a potential source of salt in fresh

TABLE 4-2 TYPICAL CHLORIDE CONCENTRATIONS IN SOURCES OF WATER (Hanes et al. 1970)

Type of Water	Chloride Concentration (mg/L)
Rainwater	0–2
Upland surface water	0–12
Unpolluted river water	0–15
Springwater	0–25
Deep well water	0–50
Sewage water	70–500
Seawater	20 000

waters in coastal areas. Other sources are natural salt deposits, brines from oil and gas fields, household sewage, agricultural chemicals, and industrial waste (Hanes et al. 1970). During the past 30 years, salt runoff from highways, especially from salt storage facilities, has been identified as a source of salt in surface water. In recent years greater attention to salt storage practices has reduced the incidence of storage-related contamination; hence, this section focuses on highway surface runoff as a source of surface water contamination.

During and after storms and during spring melts, highway runoff may contain high concentrations of sodium and chloride. For instance, chloride concentrations higher than 10 000 mg/L have been reported in Ontario and Wisconsin during early spring thaws near large roadside snowbanks (Kronis 1978; Schraufnagel 1965). Ordinarily, however, even high concentrations of salt are quickly diluted when they

enter larger water systems. For example, Schraufnagel found chloride concentrations higher than 10 000 mg/L in spring runoff in Wisconsin, yet the maximum concentration in adjacent surface waters was only 45 mg/L (Schraufnagel 1965). As discussed in the following sections, this dilution effect varies by size and type of surface water.

Rivers and Streams

Correlations have been established linking road salt to elevated chloride concentrations in surface waters. The correlation is weakest for large rivers because of the large dilution factor associated with river volume (Scott 1976; Hawkins 1971; Walker and Wood 1973; Van de Voorde et al. 1973; Ralston and Hamilton 1978). Generally, smaller roadside streams and creeks are more likely to be affected. The magnitude of the impact depends on factors such as water flow, salting intensity, precipitation, type of highway drainage system, topography, and natural drainage patterns (Scott 1980; Champagne 1977; Wulkowicz and Saleem 1974).

A study of 28 streams in the Sierra Nevada found noticeably higher chloride concentrations at stream locations that crossed salt-treated highways than at upstream locations far from the highway (e.g., 50 to 70 mg/L versus 0 to 10 mg/L) (Hoffman et al. 1981). Studies of small creeks and drainage basins in Illinois and New York found maximum chloride concentrations that exceeded 500 mg/L during late winter and early spring thaws (Bubeck et al. 1971; Walker and Wood 1973; Diment et al. 1973; Hawkins and Judd 1972; Scott 1979). In contrast, Hutchinson found that the effect of road salt on sodium and chloride levels in seven Maine streams and rivers was compensated for by the increased flow associated with the spring snowmelt (Hutchinson 1970).

Like most studies of salt's impacts on the environment, investigations of stream and river impacts have been site specific, and findings have been largely circumstantial. Evidence, however, consistently points toward the general conclusion that salt concentrations diminish rapidly as water volume and distance from the roadway increase. Hence, small streams and creeks running adjacent to heavily traveled, salt-treated highways are more likely to be affected by salt runoff than larger streams and rivers, which are likely to experience comparatively minor impacts.

Lakes and Ponds

Some correlation has been found between salting activity and higher sodium and chloride concentrations in lakes and ponds. However, unlike small streams and creeks, ponds and lakes are often recharged by a large and varied watershed (including groundwater), which increases dilution and complicates efforts to identify specific sources of chloride and sodium. As an example, Hutchinson found that chloride concentrations in small roadside ponds in Maine varied from less than 5 to more than 100 mg/L, often for reasons only partially related to road salt usage (Hutchinson 1966).

Determination of sources of sodium and chloride concentrations in larger lakes is even more complicated because of the potential for many industrial and residential sources of sodium and chloride, particularly in urban areas. For example, chloride concentrations have been rising in the Great Lakes since the beginning of the century; however, it is not clear how these increases have been affected by road salt, because the upward trend began long before the widespread use of deicing chemicals (Bowden 1981; Kenaga 1978; Fromme 1971). Meanwhile, Lake George in New York and Lake Tahoe in California and Nevada, large rural lakes in regions with heavy salt use (e.g., to clear roads for ski resorts), have shown little change in sodium and chloride concentrations over time (Lipka and Aulenbach 1976; Goldman, unpublished data).

Aquatic Life

In general, the impacts of salt concentrations from highway deicing on water life are thought to be minor. Whereas high and sustained chloride concentrations in surface waters (more than 1000 mg/L) have been linked to growth changes in some plankton (Stewart 1974; Antonyan and Pinevich 1967), field studies indicate that such high concentrations are uncommon (Goldman and Hoffman 1975; Kersey 1981; Molles 1980). The extreme chloride concentrations that are harmful to fish (400 to 12 000 mg/L) are rarely generated by highway deicing (Schraufnagel 1973; Jones et al. 1986).

In theory, a salt load to a lake or pond will sink to the bottom because of its higher density. This effect can reduce water circulation and reaeration in lower depths, which can lead to loss of dissolved oxygen and mortality of organisms inhabiting this region (Hawkins

and Judd 1972). Prolonged periods of reduced oxygen can result in increased nutrient loading at the stream or lake bottom, which could increase spring and summer algal growth, which, in turn, may further deplete dissolved oxygen. In the literature, however, few incidents of this extreme effect have been reported, the most notable being Irondequoit Bay near Rochester, New York (Bubeck et al. 1971).

Groundwater

Highway salt enters groundwater in several ways. Runoff from highways can flow from the pavement into unlined ditches and infiltrate surrounding soil. Road salt applied during snowstorms is generally plowed off the roadway and paved shoulder. When the resulting snowbanks melt, the meltwater, together with the dissolved salt, can migrate through soil and move to the water table. Groundwater supplies nearly half of the U.S. population with household water (Bouwer 1978). Hence, the potential for road salt to contaminate groundwater has become a concern in several parts of the country, especially in the Northeast, where salt use is heavy. Because this concern is related primarily to salt in drinking water and its impact on health, discussion of effects on groundwater is reserved for the following chapter.

SOIL

Road salt's impacts on vegetation and water are linked to its movement through soil, which is one reason to consider salt's impact on soil. Soil also merits separate attention because it affects other factors, such as roadside stability.

The infiltration of salt into soil depends on a variety of site-specific factors. Because most salt is plowed or splashed off the pavement, the highest salt concentrations are usually found near the shoulders of the roadway (Murray and Ernst 1976). When salt is transported by highway runoff, the transport distance usually depends on local features and conditions, such as the slope of the roadside, direction of drainage, type of highway drainage system, soil type, vegetative cover, presence of snow and ice, and precipitation (Colwill et al. 1982).

The downward transport of salt through soil is often slow and dependent on the drainage, or infiltration, characteristics of the soil.

Table 1
Surface Water Field Measurements
November 22, 2005
Cherry Blossom LLC
ISE Project #02061

Sample ID	A	A	B	B	B	C
Sample Location	**Main Retention Pond**	**Main Retention Pond**	**Upper Parking Level Retention Pond**	**Upper Parking Level Retention Pond**	**Upper Parking Level Retention Pond**	**Lower Retention Pond (behind Maint. Bldg)**
Date Collected	11/22/05	11/23/05	11/22/05	11/22/05	11/23/05	11/22/05
Date Extracted	NA	NA	NA	NA	NA	NA
Date Analyzed	11/22/05	In Process	11/22/05	11/22/05	In Process	11/22/05
Collection Method	Grab	Grab	Grab	Grab	Grab	Grab
Analytical Method No.	NA	325.2	NA	NA	325.2	NA
Dissolved Oxygen (mg/L)	1.57	NA	0.02	0.01	NA	7.34
Temperature (degrees C)	4.2	NA	3.3	3.3	NA	2.7
pH	5.33	NA	6.69	6.71	NA	6.83
Conductivity (mS/cm)	**4.54**	**NA**	**0.66**	**0.63**	**NA**	**1.17**
Chloride	NA	In Process	NA	NA	In Process	NA

NOTES:
NA: Not Analyzed

Table 1
Surface Water Field Measurements
November 22, 2005
Cherry Blossom LLC
ISE Project #02061

Sample ID	C	D	D	E	E	E
Sample Location	Lower Retention Pond (behind Maint. Bldg)	South side Angel, Tobeco Creek	South side Angel, Tobeco Creek	South side Angel, Off-Site Accumulation Area	South side Angel, Off-Site Accumulation Area	South side Angel, Off-Site Accumulation Area
Date Collected	11/23/05	11/22/05	11/22/05	11/22/05	11/22/05	11/22/05
Date Extracted	NA	NA	NA	NA	NA	NA
Date Analyzed	In Process	11/22/05	11/22/05	11/22/05	11/22/05	11/22/05
Collection Method	Grab	Grab	Grab	Grab	Grab	Grab
Analytical Method No.	325.2	NA	NA	NA	NA	NA
Dissolved Oxygen (mg/L)	NA	9.97	10.00	4.46	4.62	4.63
Temperature (degrees C)	NA	1.3	1.4	1.0	0.8	0.6
pH	NA	7.45	7.45	7.17	7.09	7.07
Conductivity (mS/cm)	NA	0.36	0.36	0.36	0.41	0.42
Chloride	In Process	NA	NA	NA	NA	NA

NOTES:
NA: Not Analyzed

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Division: WB
Report to: SY PAULIK
MDEQ-WB-CADILLAC
CADILLAC DISTRICT OFFICE
120 W. CHAPIN STREET, CADILLAC, MI 49601

Total: $461.44

Lab Work Order # : 50700165
Work Site ID : LB040160
Site Name : WILLIAMSBURG RECEIVI
Received: 07/19/2005
Reported: 07/28/2005
Collected By: SY PAULIK

Samples Received :

No:	Sample ID	Sample Description	Matrix:	Collection Date
01	AA59337	SWE-01	WATER	07/15/2005
02	AA59338	WR-02	WATER	07/15/2005

I certify that the analysis performed by the MDEQ Environmental Laboratory are accurate and that the laboratory tests were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Bob Avery, Laboratory Director

MICHIGA)EPARTMENT OF ENVIRONMENTAL . 'ALITY
ENVIRONMENTAL LABORATORY
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Sample Number AA59337 SWE-01

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
16887006	Chloride	6770	mg/L	1	D	07/19/2005	325.2	LU
	Sulfate	770	mg/L	2	D	07/19/2005	375.2	LU
	BOD - Carbonaceous 5 days	5900	mg/L	2	H	07/22/2005	405.1	GW
	BOD - Total 5 days	6300	mg/L	2	8 H	07/22/2005	405.1	GW
	KN TP - Digestion	Completed				07/26/2005	351.2	DS1
7723-14-0	Total Phosphorus	19	mg P/L	0.010		07/26/2005	365.4	DS1
7664-41-7	Ammonia	15.	mg N/L	0.01	P	07/26/2005	350.1	RA
7727-37-9	Nitrate + Nitrite	0.2	mg N/L	0.01	D P	07/26/2005	353.2	RA
	Conductance	20690	umhos/cm			07/20/2005	120.1	RM
	pH	4.50	pH			07/19/2005	150.1	RK
	Priority 1 Costs	Completed				07/25/2005		SG

Sample Number AA59338 WR-02

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
16887006	Chloride	1240	mg/L	1	D	07/19/2005	325.2	LU
	Sulfate	203	mg/L	2	D	07/19/2005	375.2	LU
	BOD - Carbonaceous 5 days	7700	mg/L	2	H	07/22/2005	405.1	GW
	BOD - Total 5 days	6900	mg/L	2	8 H	07/22/2005	405.1	GW
	KN TP - Digestion	Completed				07/25/2005	351.2	DS1
7723-14-0	Total Phosphorus	6.9	mg P/L	0.010	I	07/25/2005	365.4	DS1
7664-41-7	Ammonia	0.7	mg N/L	0.01	I P	07/26/2005	350.1	RA
7727-37-9	Nitrate + Nitrite	0.2	mg N/L	0.01	I P	07/26/2005	353.2	RA
	Conductance	6100	umhos/cm			07/20/2005	120.1	RM
	pH	5.23	pH			07/19/2005	150.1	RK

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

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TEL: (517) 335-9800
FAX: (517) 335-9600

Qualifier Code	Qualifier Description
1	Result(s) and RL(s) are estimated due to low surrogate recovery.
2	Result is estimated due to high surrogate recovery.
3	Result(s) and RL(s) are estimated due to low matrix spike recovery.
4	Result is estimated due to high matrix spike recovery.
5	Result and RL are estimated due to low continuing calibration standard criteria failure.
6	Result is estimated due to high continuing calibration standard criteria failure.
7	Result(s) and RL(s) are estimated due to poor precision.
8	Result(s) and RL(s) are estimated due to low recovery of batch QC.
9	Result outside QC acceptance criteria.
A	Value reported is the mean of two or more determinations.
C	Value calculated from other independent parameters.
D	Analyte value quantified from a dilution(s); reporting limit (RL) raised.
E	Result is estimated due to high recovery of batch QC.
F	Free cyanide was not analyzed due to low level of total cyanide.
G	Result and RL are estimated due to initial calibration standard criteria failure.
H	Recommended laboratory holding time was exceeded.
I	Dilution required due to matrix interference; reporting limit (RL) raised.
J	Analyte was positively identified. Value is an estimate.
JA	Result is estimated due to multiple Aroclors present.
JC	Result is estimated since confirmation analysis did not meet acceptance criteria
JD	Due to severe degradation, specific Aroclor identification is difficult and quantitation is estimated.
K	RL(s) raised due to matrix interferences.
KR	RL(s) raised due to low sample volume submitted.
KS	RL(s) raised due to low total solids.
KW	RL(s) raised due to light sample weight.
LB	Reported library search compounds are tentative identifications with estimated concentrations.
M	The level of the method preparation blank (MPB) is reported in the qualifier column.
N	Non-homogeneous sample made analysis of sample questionable.
O	Result and RL estimated due to analysis from an open vial.
P	Recommended sample collection/preservation technique not used; reported result(s) is an estimate.
Q	Quantity of sample insufficient to perform analyses requested.
R	Result confirmed by re-extraction and analysis.
S	Supernatant analyzed.
T	Reported value is less than the reporting limit (RL). Result is estimated.
V	Value not available due to dilution.
W	Reported value is less than the method detection limit (MDL).
X	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200°C. 2-Methylnaphthalene & naphthalene have boiling points above 200°C and are better suited to analysis by methods 8270 or 625 as semivolatile organics.
PI	Possible interference may have affected the accuracy of the laboratory result
Z	Result reported below the RL to meet the TDL in RRD Op Memo 2 (10/22/04) multiplied by applicable dilution factor.

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
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Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

White

LAB WORK ORDER # 50700033

MATRIX=WATER

SITE CODE NUMBER	SITE NAME	CIRCLE ONE:	3. NPDES
LB040160	Williamsburg Receiving & Storage		

DIVISION	DISTRICT/OFFICE	MDEQ PROJECT MANAGER	E-MAIL ADDRESS	PHONE	ACCEPT HIT CODES? YES / NO If yes, which parameters?
WB	Cadillac District Office	Sy Paulik	Paulik3@michigan.gov	231-775-3960 x 6207	

PRIMARY CONTACT PERSON	CONTRACT FIRM NAME (if applicable)	PHONE	AY:	INDEX: 37500	PCA: 79001
Janice Heuer	heuerj@michigan.gov	231-775-3960 x 6203	PROJECT:		PH:

OVERFLOW LAB (Required for Funded RRD & CMI samples)
1ST CHOICE: Bill Buss
2ND CHOICE:

E-MAIL ADDRESSES TO SEND ADDITIONAL REPORTS TO:
1.)
2.)

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

FINAL REPORT HAS BEEN SENT VIA E-MAIL

RECEIVED
JUL 27 2005
WATER DIVISION
CADILLAC DISTRICT OFFICE

	LAB USE ONLY	SAMPLE DESCRIPTION	SAMPLE COLLECTED DATE MM/DD/YY	SAMPLE COLLECTED TIME MILITARY	COMMENTS
1	AA58382	discharge in Paradi field	7/5/2005	2100	TDS & CL
2	AA				
3	AA				
4	AA				
5	AA				
6	AA				
7	AA				
8	AA				
9	AA				
10	AA				

ORGANIC | **GENERAL CHEMISTRY** | **INORGANIC**

GN

Residue TDS 1

ONLY ONE SAMPLE

MN

Cl 1

Chain-of-Custody

	RELEASED BY / ORGANIZATION	RECEIVED BY / ORGANIZATION	DATE	TIME
Print Name & Organization	Sy Paulik - DEQ-WB Cadillac	Print Name & Organization SCOTT RECORD DEQ	7/7/5	0910
Signature	Sy Paulik	Signature		
Print Name & Organization		Print Name & Organization		
Signature		Signature		
Print Name & Organization		Print Name & Organization		
Signature		Signature		

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Division: WB
Report to: JANICE HEUER
MDEQ-WB-CADILLAC
CADILLAC DISTRICT OFFICE
120 W. CHAPIN STREET, CADILLAC, MI 49601

Total: $79.76

Lab Work Order # : 50700213
Work Site ID : LB040160
Site Name : WILLIAMSBURG RECEIVI
Received: 07/21/2005
Reported: 07/26/2005
Collected By: JANICE HEUER

Samples Received :

No:	Sample ID	Sample Description	Matrix:	Collection Date
01	AA59662	DITCH	WATER	07/19/2005

Sample Comments :

AA59662 PRIORITY 1

I certify that the analysis performed by the MDEQ Environmental Laboratory are accurate and that the laboratory tests were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Bob Avery, Laboratory Director

MICHIGA EPARTMENT OF ENVIRONMENTAL ALITY
ENVIRONMENTAL LABORATORY
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Sample Number AA59662 DITCH

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
16887006	Chloride	1010	mg/L	1	D	07/22/2005	325.2	LU
TDS	Solids - Total Dissolved	6800	mg/L	20		07/26/2005	160.1	RS
	Conductance	5560	umhos/cm			07/22/2005	120.1	RM
	Solids - Suspended	530	mg/L	4		07/25/2005	160.2	RS
	Priority 1 Costs	Completed				07/25/2005		SG

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

Lab Work Order #: 50700213

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
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Qualifier Code	Qualifier Description
1	Result(s) and RL(s) are estimated due to low surrogate recovery.
2	Result is estimated due to high surrogate recovery.
3	Result(s) and RL(s) are estimated due to low matrix spike recovery.
4	Result is estimated due to high matrix spike recovery.
5	Result and RL are estimated due to low continuing calibration standard criteria failure.
6	Result is estimated due to high continuing calibration standard criteria failure.
7	Result(s) and RL(s) are estimated due to poor precision.
8	Result(s) and RL(s) are estimated due to low recovery of batch QC.
9	Result outside QC acceptance criteria.
A	Value reported is the mean of two or more determinations.
C	Value calculated from other independent parameters.
D	Analyte value quantified from a dilution(s); reporting limit (RL) raised.
E	Result is estimated due to high recovery of batch QC.
F	Free cyanide was not analyzed due to low level of total cyanide.
G	Result and RL are estimated due to initial calibration standard criteria failure.
H	Recommended laboratory holding time was exceeded.
I	Dilution required due to matrix interference; reporting limit (RL) raised.
J	Analyte was positively identified. Value is an estimate.
JA	Result is estimated due to multiple Aroclors present.
JC	Result is estimated since confirmation analysis did not meet acceptance criteria
JD	Due to severe degradation, specific Aroclor identification is difficult and quantitation is estimated.
K	RL(s) raised due to matrix interferences.
KR	RL(s) raised due to low sample volume submitted.
KS	RL(s) raised due to low total solids.
KW	RL(s) raised due to light sample weight.
LB	Reported library search compounds are tentative identifications with estimated concentrations.
M	The level of the method preparation blank (MPB) is reported in the qualifier column.
N	Non-homogeneous sample made analysis of sample questionable.
O	Result and RL estimated due to analysis from an open vial.
P	Recommended sample collection/preservation technique not used; reported result(s) is an estimate.
Q	Quantity of sample insufficient to perform analyses requested.
R	Result confirmed by re-extraction and analysis.
S	Supernatant analyzed.
T	Reported value is less than the reporting limit (RL). Result is estimated.
V	Value not available due to dilution.
W	Reported value is less than the method detection limit (MDL).
X	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200°C. 2-Methylnaphthalene & naphthalene have boiling points above 200°C and are better suited to analysis by methods 8270 or 625 as semivolatile organics.
PI	Possible interference may have affected the accuracy of the laboratory result
Z	Result reported below the RL to meet the TDL in RRD Op Memo 2 (10/22/04) multiplied by applicable dilution factor.

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
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Laboratory Contacts
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Systems Mgmt Unit: George Krisztian

WRS
GT Co.

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Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Division: WB
Report to: SY PAULIK
MDEQ-WB-CADILLAC
CADILLAC DISTRICT OFFICE
120 W. CHAPIN STREET, CADILLAC, MI 49601

Total: $1,027.80

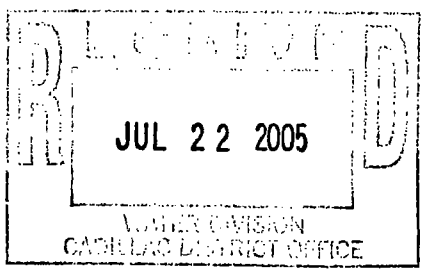
Lab Work Order # : 50700108
Work Site ID : LB040160
Site Name : WILLIAMSBURG RECEIVI
Received: 07/13/2005
Reported: 07/22/2005
Collected By: SY PAULIK & GREG GAUD

Samples Received :

No:	Sample ID	Sample Description	Matrix:	Collection Date
01	AA58909	WR01	WATER	07/12/2005
02	AA58910	WR02	WATER	07/12/2005
03	AA58911	WR03	WATER	07/12/2005

I certify that the analysis performed by the MDEQ Environmental Laboratory are accurate and that the laboratory tests were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Bob Avery, Laboratory Director



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Sample Number AA58909 WR01

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
16887006	Chloride	1550	mg/L	1	D	07/14/2005	325.2	LU
	Sulfate	623	mg/L	2	D	07/15/2005	375.2	LU
	BOD - Carbonaceous 5 days	17000	mg/L	2		07/14/2005	405.1	GW
	BOD - Total 5 days	14000	mg/L	2		07/14/2005	405.1	GW
TDS	Solids - Total Dissolved	11000	mg/L	20		07/19/2005	160.1	TK
	KN TP - Digestion	Completed				07/20/2005	351.2	DS1
7723-14-0	Total Phosphorus	25	mg P/L	0.010		07/20/2005	365.4	DS1
7664-41-7	Ammonia	32.	mg N/L	0.01	D	07/14/2005	350.1	RA
7727-37-9	Nitrate + Nitrite RL = 0.2 mg/L	ND	mg N/L	0.01	D	07/14/2005	353.2	RA
14797650	Nitrite	.23	mg N/L	0.01		07/14/2005	353.3	EG
	Conductance	7580	umhos/cm			07/14/2005	120.1	RM
	pH	4.39	pH			07/13/2005	150.1	RS
	Solids - Suspended	1000	mg/L	4		07/18/2005	160.2	TK
7440-44-0	TOC	5900	mg/L	0.5	D	07/19/2005	415.1	MB
	Priority 1 Costs	Completed				07/15/2005		CS

Sample Number AA58910 WR02

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
16887006	Chloride	1280	mg/L	1	D	07/14/2005	325.2	LU
	Sulfate	213	mg/L	2	D	07/15/2005	375.2	LU
	BOD - Carbonaceous 5 days	12000	mg/L	2		07/14/2005	405.1	GW
	BOD - Total 5 days	9300	mg/L	2		07/14/2005	405.1	GW
TDS	Solids - Total Dissolved	8100	mg/L	20	A	07/19/2005	160.1	TK
	KN TP - Digestion	Completed				07/18/2005	351.2	DS1
7723-14-0	Total Phosphorus	8.1	mg P/L	0.010	I	07/18/2005	365.4	DS1
7664-41-7	Ammonia	7.7	mg N/L	0.01		07/14/2005	350.1	RA
7727-37-9	Nitrate + Nitrite	0.2	mg N/L	0.01	D	07/14/2005	353.2	RA
14797650	Nitrite RL = .10	.12	mg N/L	0.01	D	07/14/2005	353.3	EG
	Conductance	6070	umhos/cm			07/14/2005	120.1	RM
	pH	4.72	pH			07/13/2005	150.1	RS
	Solids - Suspended	210	mg/L	4		07/19/2005	160.2	TK
7440-44-0	TOC	3800	mg/L	0.5	D	07/19/2005	415.1	MB

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RL : Reporting Limit
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Laboratory Contacts
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Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

Lab Work Order #: 50700108

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Sample Number AA58911 WR03

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
16887006	Chloride	1270	mg/L	1	D	07/14/2005	325.2	LU
	Sulfate	201	mg/L	2	D	07/15/2005	375.2	LU
	BOD - Carbonaceous 5 days	10000	mg/L	2		07/14/2005	405.1	GW
	BOD - Total 5 days	14000	mg/L	2		07/14/2005	405.1	GW
TDS	Solids - Total Dissolved	8500	mg/L	20	A	07/19/2005	160.1	TK
	KN TP - Digestion	Completed				07/18/2005	351.2	DSI
7723-14-0	Total Phosphorus	7.0	mg P/L	0.010	I	07/18/2005	365.4	DSI
7664-41-7	Ammonia	10.	mg N/L	0.01		07/14/2005	350.1	RA
7727-37-9	Nitrate + Nitrite	0.1	mg N/L	0.01	D	07/14/2005	353.2	RA
14797650	Nitrite RL = .10	.11	mg N/L	0.01	D	07/14/2005	353.3	EG
	Conductance	5980	umhos/cm			07/14/2005	120.1	RM
	pH	4.59	pH			07/13/2005	150.1	RS
	Solids - Suspended	46	mg/L	4		07/19/2005	160.2	TK
7440-44-0	TOC	4100	mg/L	0.5	D	07/19/2005	415.1	MB

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Systems Mgmt Unit: George Krisztian

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S	Supernatant analyzed.
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Z	Result reported below the RL to meet the TDL in RRD Op Memo 2 (10/22/04) multiplied by applicable dilution factor.

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ug / Kg : microgram / kilogram (ppb)
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DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

White

LAB WORK ORDER #

MATRIX=WATER

SITE CODE NUMBER / SITE NAME	CIRCLE ONE	
Williamsburg Receiving + Storage	1. NO SITE FUNDING 2. CMI (Non RRD) 3. NPDES 4. OTHER-list here - GW (circled)	5. RRD-CLEANUP - State Funded 6. RRD-LUST - Federal 7. RRD-SUPERFUND- Federal

DIVISION	DISTRICT/OFFICE	MDEQ PROJECT MANAGER	E-MAIL ADDRESS	PHONE	ACCEPT HT CODES? YES / NO If yes, which parameters?
WB	Cadillac	Sy Paulik	Pauliks@Michigan.gov	231-775-3960 X6267	

PRIMARY CONTACT PERSON	CONTRACT FIRM NAME (if applicable)	PHONE	AY:	INDEX: 37500	PCA: 79001
			PROJECT:		PH:

OVERFLOW LAB (Required for Funded RRD & CMI samples)

1ST CHOICE: 2ND CHOICE:

E-MAIL ADDRESSES TO SEND ADDITIONAL REPORTS TO:
1.) hauarj@michigan.gov
2.)

COLLECTED BY: Sy Paulik + Greg Goudy

PHONE:

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY		SAMPLE DESCRIPTION	SAMPLE COLLECTED DATE MM/DD/YY	SAMPLE COLLECTED TIME MILITARY	COMMENTS
1	AA	WR01	7/12/05	19:45	ponding area near discharge
2	AA	WR02	7/12/05	20:00	in pond in gully
3	AA	WR03	7/12/05	20:15	out of pipe from pond in gully
4	AA				
5	AA				
6	AA				
7	AA				
8	AA				
9	AA				
10	AA				

ORGANIC

VOA VOLATILES (8260)	
Full List	1 2 3 4 5 6 7 8 9 10
BTEX/MTBE/TMB only	1 2 3 4 5 6 7 8 9 10
ON PESTICIDES/PCBS (8081/8082)	
Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10
Pesticides only	1 2 3 4 5 6 7 8 9 10
PCBs only	1 2 3 4 5 6 7 8 9 10
BNA BASE NEUTRAL & ACIDS (8270)	
BNAs	1 2 3 4 5 6 7 8 9 10
PNAs only	1 2 3 4 5 6 7 8 9 10
BNs only	1 2 3 4 5 6 7 8 9 10
ACIDs only	1 2 3 4 5 6 7 8 9 10
SPECIAL REQUESTS	
Library Search (Qualitative)	
Volatiles	1 2 3 4 5 6 7 8 9 10
Semivolatiles	1 2 3 4 5 6 7 8 9 10
FingerPrint	1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

DO Diss Oxygen	1 2 3 4 5 6 7 8 9 10
GN NO_2, ~~ortho~~	(1 2 3 circled) 4 5 6 7 8 9 10
Residue SS	(1 2 3 circled) 4 5 6 7 8 9 10
Residue TDS	(1 2 3 circled) 4 5 6 7 8 9 10
	1 2 3 4 5 6 7 8 9 10
BOD Tot 5 day	(1 2 3 circled) 4 5 6 7 8 9 10
BOD Carb 5 day	(1 2 3 circled) 4 5 6 7 8 9 10
Turbidity	1 2 3 4 5 6 7 8 9 10
CA Chlorophyll	1 2 3 4 5 6 7 8 9 10
GA ~~COD~~	1 2 3 4 5 6 7 8 9 10
TOC	(1 2 3 circled) 4 5 6 7 8 9 10
NO3 + NO2. NH3	(1 2 3 circled) 4 5 6 7 8 9 10
~~Kjeldahl N~~, Tot P	(1 2 3 circled) 4 5 6 7 8 9 10
S Sulfide	1 2 3 4 5 6 7 8 9 10
GP Phenolics	1 2 3 4 5 6 7 8 9 10
GB Total CN	1 2 3 4 5 6 7 8 9 10
Amenable CN	1 2 3 4 5 6 7 8 9 10
GCN Available CN	1 2 3 4 5 6 7 8 9 10
OG Oil & Grease	1 2 3 4 5 6 7 8 9 10

INORGANIC

MA Total Metals	1 2 3 4 5 6 7 8 9 10
MAD Diss-Field Filtered	1 2 3 4 5 6 7 8 9 10
MD Diss-Lab Filtered	1 2 3 4 5 6 7 8 9 10
Circle Requested Metal and Corresponding Sample No.	
MICH TEN METALS (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)	1 2 3 4 5 6 7 8 9 10
ICP-MS (200.8/6020)	
Cd Cr Cu Ni Pb Zn	1 2 3 4 5 6 7 8 9 10
As Ba Se Ag	1 2 3 4 5 6 7 8 9 10
Co Mn Sb Sr Tl	1 2 3 4 5 6 7 8 9 10
Al Be Mo Ti V	1 2 3 4 5 6 7 8 9 10
ICP (200.7/6010)	
B Fe Li	1 2 3 4 5 6 7 8 9 10
Flame AA (200/7000 Series)	
Ca Mg Na K	1 2 3 4 5 6 7 8 9 10
Hardness	1 2 3 4 5 6 7 8 9 10
Cold Vapor AA (245.1/7470/7471)	
Hg	1 2 3 4 5 6 7 8 9 10
MN pH, Conductance	(1 2 3 circled) 4 5 6 7 8 9 10
Cl, SO_4, ~~Total Alk~~	(1 2 3 circled) 4 5 6 7 8 9 10
~~HCO_3, CO_3~~	1 2 3 4 5 6 7 8 9 10
~~Cr^{6}~~	1 2 3 4 5 6 7 8 9 10

Chain-of-Custody

RELEASED BY / ORGANIZATION	RECEIVED BY / ORGANIZATION	DATE	TIME
Print Name & Organization: Sy Paulik DEQ-Cadillac Signature: Sy Paulik	Print Name & Organization: Signature:		
Print Name & Organization: DAVID PORTER DEQ CADILLAC Signature: David R Porter	Print Name & Organization: D Scott Reed DEQ Signature: D	7/13/05	1220
Print Name & Organization: Signature:	Print Name & Organization: Signature:		

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WRS GTLO

Division: WB
Report to: SY PAULIK
MDEQ-WB-CADILLAC
CADILLAC DISTRICT OFFICE
120 W. CHAPIN STREET, CADILLAC, MI 49601

Total: $274.60

Lab Work Order # : 50600065
Work Site ID : LB040160
Site Name : WILLIAMSBURG RECEIVI
Received: 06/07/2005
Reported: 06/29/2005
Collected By:

Samples Received :

No:	Sample ID	Sample Description	Matrix:	Collection Date
01	AA56224	STORM WATER POND	WATER	06/06/2005
02	AA56225	STORM WATER POND 1	WATER	06/06/2005

I certify that the analysis performed by the MDEQ Environmental Laboratory are accurate and that the laboratory tests were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Bob Avery, Laboratory Director

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Sample Number AA56224 STORM WATER POND

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
16887006	Chloride	524	mg/L	1	D	06/09/2005	325.2	LU
	BOD - Carbonaceous 5 days	1300	mg/L	2		06/08/2005	405.1	GW
	BOD - Total 5 days	1400	mg/L	2		06/08/2005	405.1	GW
TDS	Solids - Total Dissolved	2700	mg/L	20	A	06/10/2005	160.1	TK
	KN TP - Digestion	Completed				06/13/2005	351.2	DS1
7723-14-0	Total Phosphorus	2.9	mg P/L	0.010		06/13/2005	365.4	DS1
7664-41-7	Ammonia	2.8	mg N/L	0.01		06/09/2005	350.1	RA
7727-37-9	Nitrate + Nitrite	0.1	mg N/L	0.01	D	06/09/2005	353.2	RA
	Conductance	2627	umhos/cm			06/08/2005	120.1	RM
	pH	6.63	pH			06/07/2005	150.1	RS
	Solids - Suspended	290	mg/L	4		06/09/2005	160.2	TK
7440-44-0	TOC	590	mg/L	0.5	D	06/10/2005	415.1	MB
	Turbidity	120	NTU	1		06/08/2005	180.1	GW

Sample Number AA56225 STORM WATER POND 1

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
16887006	Chloride	518	mg/L	1	D	06/09/2005	325.2	LU
	BOD - Carbonaceous 5 days	3700	mg/L	2	H	06/08/2005	405.1	GW
	BOD - Total 5 days	3600	mg/L	2	8 H	06/08/2005	405.1	GW
TDS	Solids - Total Dissolved	4300	mg/L	20	A	06/10/2005	160.1	TK
	Conductance	2638	umhos/cm			06/08/2005	120.1	RM
	pH	5.67	pH			06/07/2005	150.1	RS
	Solids - Suspended	240	mg/L	4		06/09/2005	160.2	TK
	Turbidity	90	NTU	1		06/08/2005	180.1	GW

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Lab Work Order #: 50600065

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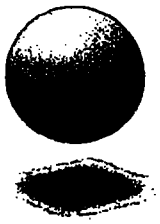
N	Non-homogeneous sample made analysis of sample questionable.
O	Result and RL estimated due to analysis from an open vial.
P	Recommended sample collection/preservation technique not used; reported result(s) is an estimate.
Q	Quantity of sample insufficient to perform analyses requested.
R	Result confirmed by re-extraction and analysis.
S	Supernatant analyzed.
T	Reported value is less than the reporting limit (RL). Result is estimated.
V	Value not available due to dilution.
W	Reported value is less than the method detection limit (MDL).
X	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200°C. 2-Methylnaphthalene & naphthalene have boiling points above 200°C and are better suited to analysis by methods 8270 or 625 as semivolatile organics.
PI	Possible interference may have affected the accuracy of the laboratory result
Z	Result reported below the RL to meet the TDL in RRD Op Memo 2 (10/22/04) multiplied by applicable dilution factor.

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

WRS
GT Co



OMI

606 FRANKLIN ST., TRAVERSE CITY, MI 49686
PHONE (231) 922-4922 FAX (231) 922-8170

FACSIMILE TRANSMITTAL

To:	Janice	**Fax. No.:**	(231)-775-1511
Copy:		**Fax. No.:**	
From:	Liz Hart (OMI)	**Date:**	12-15-05
		Pages:	2 (including cover sheet)

RE:

Comments: WRS November Results 2005

OPERATIONS MANAGEMENT INTERNATIONAL
TRAVERSE CITY WASTEWATER TREATMENT PLANT

ANALYTICAL LABORATORY REPORT

CLIENT:DEQ REPORT DATE: 12-15-05

Sample ID	Sample Date	Analysis Date	Analysis	Units	Result
WRS	11-10-05	11-11-05	BOD	Mg/L	6,534
WRS	11-10-05	11-15-05	Chloride	Mg/L	1,050

Signature, Lab Analyst

Table 1
Water Analytical Results
Pond Release Investigation
Cherry Blossom LLC
ISE Project #02061

Sample ID		A	A	B	B	B
Sample Location	**DWC**	**Wastewater Pond, Area A**	**Wastewater Pond, Area A**	**Upper Parking Level Stormwater Retention Pond, Area B**	**Upper Parking Level Stormwater Retention Pond, Area B**	**Upper Parking Level Stormwater Retention Pond, Area B**
Date Collected		11/22/05	11/23/05	11/22/05	11/22/05	11/23/05
Date Extracted		NA	NA	NA	NA	NA
Date Analyzed		11/22/05	11/29/05	11/22/05	11/22/05	11/29/05
Collection Method		Grab	Grab	Grab	Grab	Grab
Analytical Method No.		NA	20-Nov	NA	NA	20-Nov
Dissolved Oxygen (mg/L)		1.57	NA	0.02	0.01	NA
Temperature (degrees C)		4.2	NA	3.3	3.3	NA
pH		5.33	NA	6.69	6.71	NA
Conductivity (mS/cm)		4.54	NA	0.659	0.634	NA
Chloride (mg/L, PPM)	**250**	NA	865	NA	NA	105

NOTES:
NA: Not Analyzed
(E) -Criterion is the aesthetic
drinking water value
DWC - Residential & Commercial I Drinking Water Criteria & RBSLs

Table 1
Water Analytical Results
Pond Release Investigation
Cherry Blossom LLC
ISE Project #02061

Sample ID		C	C	D	D	E
Sample Location	DWC	Lower Stormwater Retention Pond (behind Maint. Bldg), Area B	Lower Stormwater Retention Pond (behind Maint. Bldg), Area B	South side Angel, Tobeco Creek	South side Angel, Tobeco Creek	South side Angel, Off-Site Accumulation Area, Area D
Date Collected		11/22/05	11/23/05	11/22/05	11/22/05	11/22/05
Date Extracted		NA	NA	NA	NA	NA
Date Analyzed		11/22/05	11/29/05	11/22/05	11/22/05	11/22/05
Collection Method		Grab	Grab	Grab	Grab	Grab
Analytical Method No.		NA	20-Nov	NA	NA	NA
Dissolved Oxygen (mg/L)		7.34	NA	9.97	10	4.46
Temperature (degrees C)		2.7	NA	1.3	1.4	1
pH		6.83	NA	7.45	7.45	7.17
Conductivity (mS/cm)		1.17	NA	0.36	0.36	0.357
Chloride (mg/L, PPM)	250	NA	200	NA	NA	NA

NOTES:
NA: Not Analyzed
(E) -Criterion is the aesthetic
drinking water value
DWC - Residential & Commercial I Drinking Water Cri

Table 1
Water Analytical Results
Pond Release Investigation
Cherry Blossom LLC
ISE Project #02061

Sample ID		E	E	F	F	TMW-1	TMW-2
Sample Location	DWC	South side Angel, Off-Site Accumulation Area, Area D	South side Angel, Off-Site Accumulation Area, Area D	Surface Water Sample, Area D, WS-F (N)	Surface Water Sample, Area D, WS-F (S)	South, Area D	North, Area D
Date Collected		11/22/05	11/22/05	12/02/05	12/02/05	12/05/05	12/05/05
Date Extracted		NA	NA	NA	NA	NA	NA
Date Analyzed		11/22/05	11/22/05	12/06/05	12/06/05	12/07/05	12/07/05
Collection Method		Grab	Grab	Grab	Grab	Grb	Grab
Analytical Method No.		NA	NA	20-Nov	325.2	325.2	325.2
Dissolved Oxygen (mg/L)		4.62	4.63	NA	NA	NA	NA
Temperature (degrees C)		0.8	0.6	NA	NA	NA	NA
pH		7.09	7.07	NA	NA	NA	NA
Conductivity (mS/cm)		0.409	0.42	NA	NA	NA	NA
Chloride (mg/L, PPM)	250	NA	NA	28	36	184	52

NOTES:
NA: Not Analyzed
(E) -Criterion is the aesthetic
drinking water value
DWC - Residential & Commercial I Drinking Water Cri

Table 2
Soil Analytical Results
Pond Release Investigation
Cherry Blossom LLC
ISE Project #02061

Sample ID		SB-101	SB-102	SB-103	SB-104	SB-105
Sample Location	Direct Contact Criteria & RBSLs	0-1'	0-1'	0-1'	0-1'	0-1'
Date Collected		11/23/05	11/23/05	11/23/05	11/23/05	11/23/05
Date Extracted		NA	NA	NA	NA	NA
Date Analyzed		11/29/05	12/06/05	11/29/05	12/07/05	12/07/05
Collection Method		Grab	Grab	Grab	Grab	Grab
Analytical Method No.		EPA 9251	EPA 9251	EPA 9251	EPA 9251	EPA 9251
Chloride (mg/kg, PPM)	500 (F)	1,500	30	464	328	228
Solids, Total (%)			86.9		86.3	82.5
Soil Moisture (%)		29.2	13.1	8.6	13.8	17.5

NOTES:
NA: Not Analyzed
(F): Criterion is based on adverse impacts to plant life and phytotoxicity

Table 2
Soil Analytical Results
Pond Release Investigation
Cherry Blossom LLC
ISE Project #02061

Sample ID		SB-106	SB-107	SB-108	SB-109	SB-110
Sample Location	Direct Contact Criteria & RBSLs	0-1'	0-1'	0-1'	0-1'	0-1'
Date Collected		11/23/05	11/23/05	11/23/05	11/23/05	11/23/05
Date Extracted		NA	NA	NA	NA	NA
Date Analyzed		11/29/05	12/06/05	11/29/05	11/29/05	11/29/05
Collection Method		Grab	Grab	Grab	Grab	Grab
Analytical Method No.		EPA 9251	EPA 9251	EPA 9251	EPA 9251	EPA 9251
Chloride (mg/kg, PPM)	500 (F)	275	83	610	173	2,020
Solids, Total (%)			65.1			
Soil Moisture (%)		5.1	34.9	12.0		7.6

NOTES:
NA: Not Analyzed
(F): Criterion is based on adverse impacts to plant life and phytotoxicity

Table 2
Soil Analytical Results
Pond Release Investigation
Cherry Blossom LLC
ISE Project #02061

Sample ID		SB-111	SB-111	SB-112	SB-114	SB-115	SB-116
Sample Location	Direct Contact Criteria & RBSLs	0-1'	4-5'	0-1.0'	0-0.75'	0-0.5'	0-0.75'
Date Collected		11/23/05	11/23/05	11/23/05	11/23/05	11/23/05	11/23/05
Date Extracted		NA	NA	NA	NA	NA	NA
Date Analyzed		11/29/05	11/29/05	11/29/05	12/06/05	12/06/05	12/06/05
Collection Method		Grab	Grab	Grab	Grab	Grab	Grab
Analytical Method No.		EPA 9251	EPA 9251	EPA 9251	EPA 9251	EPA 9251	EPA 9251
Chloride (mg/kg, PPM)	500 (F)	314	19	214	168	3,240	557
Solids, Total (%)					80.8	90.3	93.2
Soil Moisture (%)		4.1	10.5	7.5	19.2	9.7	6.8

NOTES:
NA: Not Analyzed
(F): Criterion is based on adverse impacts to plant life and phytotoxicity

Table 2
Soil Analytical Results
Pond Release Investigation
Cherry Blossom LLC
ISE Project #02061

Sample ID		SB-117	SB-118	SB-118	SB-119	SB-122	SB-123
Sample Location	Direct Contact Criteria & RBSLs	0-0.75'	0-0.75'	1.5-2'	0-0.75'	0-1'	0-1'
Date Collected		11/23/05	11/23/05	12/02/05	12/02/05	12/02/05	12/02/05
Date Extracted		NA	NA	NA	NA	NA	NA
Date Analyzed		12/06/05	12/06/05	12/06/05	12/06/05	12/06/05	12/06/05
Collection Method		Grab	Grab	Grab	Grab	Grab	Grab
Analytical Method No.		EPA 9251	EPA 9251	EPA 9251	EPA 9251	EPA 9251	EPA 9251
Chloride (mg/kg, PPM)	500 (F)	1,450	743	1,600	22	937	1,130
Solids, Total (%)		91.1	90.5	86.9	90.6	72.9	39.5
Soil Moisture (%)		8.9	9.5	13.1	9.4	27.1	60.5

NOTES:
NA: Not Analyzed
(F): Criterion is based on adverse impacts to plant life and phytotoxicity

Table 2
Soil Analytical Results
Pond Release Investigation
Cherry Blossom LLC
ISE Project #02061

Sample ID		SB-124	SB-125	SB-126	SB-127	SB-128	SB-129
Sample Location	Direct Contact Criteria & RBSLs	0-1'	0-1'	0-1'	0.5'	0.5'	0.5'
Date Collected		12/05/05	12/05/05	12/05/05	12/05/05	12/05/05	12/05/05
Date Extracted		NA	NA	NA	NA	NA	NA
Date Analyzed		12/07/05	12/07/05	12/07/05	12/07/05	12/07/05	12/07/05
Collection Method		Grab	Grab	Grab	Grab	Grab	Grab
Analytical Method No.		EPA 9251	EPA 9251	EPA 9251	EPA 9251	EPA 9251	EPA 9251
Chloride (mg/kg, PPM)	500 (F)	336	1,250	46	115	40	107
Solids, Total (%)		70.0	64.7	58.8	77.1	87.6	85.1
Soil Moisture (%)		30.0	35.3	41.2	22.9	12.4	14.9

NOTES:
NA: Not Analyzed
(F): Criterion is based on adverse impacts to plant life and phytotoxicity

Table 2
Soil Analytical Results
Pond Release Investigation
Cherry Blossom LLC
ISE Project #02061

Sample ID		SB-130	TMW-1	TMW-2
Sample Location	Direct Contact Criteria & RBSLs	3'	1.5'	2'
Date Collected		12/05/05	11/23/05	11/23/05
Date Extracted		NA	NA	NA
Date Analyzed		12/07/05	12/07/05	12/07/05
Collection Method		Grab	Grab	Grab
Analytical Method No.		EPA 9251	EPA 9251	EPA 9251
Chloride (mg/kg, PPM)	500 (F)	584	2,140	43
Solids, Total (%)		90.6	72.6	87.0
Soil Moisture (%)		9.4	27.4	13.0

NOTES:
NA: Not Analyzed
(F): Criterion is based on adverse impacts to plant life and phytotoxicity

Table 3
Vertical Pore Velocity Calculations
Pooled Areas, November Release
Cherry Blossom LLC
ISE Project #02061

Area	Vertical Pore Velocity, Vpw, inches/Year	Percolation Rate (q) in/year(Kalkaska data,)	Percolation Rate (q) (cm/sec)	Saturated Hydraulic Conductivity,Ks (cm/sec, EPA document)	Volumetric water content in unsaturated zone, θ (unitless)	θ_s, volumetric water content of soil under saturated conditions (unitless, EPA document)	1/(2b+3) value, b is soil specific exponential parameter, unitless (EPA Doc)
A, B, C	23.8	15.4	0.105	0.00072	0.648	0.435	0.080
D	19.9	15.4	0.105	0.00019	0.774	0.485	0.074

Equation 1: Percolation rate q (depth per unit time) $= HL + P_r - ET - Q_r$

where HL = Hydraulic loading from manmade sources, (depth per unit time)

P_r = Precipitation, (depth per unit time)

ET = Evapotranspiration, (depth per unit time)

Q_r = Runoff, (depth per unit time)

Equation 2: Interstitial pore velocity: v_{pw} (depth per unit time) $= q/\Theta$

where v_{pw} = Interstitial ground water (pore water) velocity, (lenth per unit time)

q = average percolation or recharge rates (see above)

Θ = volumetric moisture content of the unsaturated zone, (decimal fraction representing volume of water per volume of soil)

WRS
CTT CO

OMI, Inc.
606 Franklin Street
Traverse City, MI 49686
Tel 231 922.4922
Fax 231 992.8170

OMI

September 14, 2005

Sy Paulik
MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

Dear Sy:

Enclosed please find the results for your water samples. Analyses were performed according to the "Standard Methods for Examination of Water and Wastewater," 18th Edition.

If you have any questions concerning this result, please feel free to contact our laboratory by phoning (231) 922-4922.

Sincerely,

Liz Hart
Lab Analyst

Enclosure: Lab Report, Invoice

OPERATIONS MANAGEMENT INTERNATIONAL
TRAVERSE CITY WASTEWATER TREATMENT PLANT

ANALYTICAL LABORATORY REPORT

CLIENT: MDEQ **REPORT DATE:** 09/14/05

ADDRESS: Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

PROJECT:

Sample ID	Sample Date	Analysis	Units	Result
None	7/28/05	Chloride	Mg/L	104
		BOD	Mg/L	*
Valve 01	8/10/05	Chloride	Mg/L	2,000
		BOD	Mg/L	17,967
		NH3	Mg/L	14.6
WRS 02	8/10/05	Chloride	Mg/L	874
WRS 03	8/10/05	Chloride	Mg/L	180
		BOD	Mg/L	703
		NH3	Mg/L	.171

*Results	Dilution 1%	Mg/L
	.5	385
	.3	396
	.1	1,090
	.03	3.800

Signature, Lab Analyst

INVOICE

MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac, MI 49601-2158

Date: September 14, 2005
Project No. TRAVE916001
Invoice No.

Attn: Sy Paulik

This invoice is for laboratory analysis performed.

Sample Identification: Valve 01, Valve 02
WRS 02, WRS 03

(4) Chloride analysis	@ $15.00	$60.00
(3) NH3 analysis	@ $10.00	$30.00
(2) BOD analysis	@ $20.00	$40.00

TOTAL AMOUNT DUE **$ 130.00**

Due and Payable Upon Receipt

Please send your remittance to:

Operations Management International, Inc.
606 Franklin Street
Traverse City, MI 49686

Indy/PCA = 37500/7900
Orig. Invoice to Nancy 9-16-05
- fjd

SOS ANALYTICAL

4125 Cedar Run Rd., Suite B
Traverse City, MI 49684
Phone 231-946-6767
Fax 231-946-8741
www.sosanalytical.com

COMPANY:	OMI	SOS PROJECT NO:	053372 - 1
NAME:		SAMPLED BY:	LIZ HART/OMI
PROJECT NO:	TCWWTP	DATE RECEIVED:	8/1/05
WSSN:		TIME RECEIVED:	8:07 AM
WELL PERMIT:		SAMPLE ID:	DEQ
TAX ID:			
LOCATION:	606 FRANKLIN	DATE SAMPLED:	7/28/05
		TIME SAMPLED:	
	TRAVERSE CITY	SAMPLE MATRIX:	GRAB/WATER
	MI		
COUNTY:			
TWP:			

RECEIVED
AUG 08 2005
DEQ

INORGANICS

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
CHLORIDE EPA 325.2	104	3	mg/L (PPM)	KMC	8/2/05	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER

SOS ANALYTICAL

4125 Cedar Run Rd, Suite B
Traverse City, MI 49684
(231) 946-6767 · FAX (231) 946-8741

CUSTODY TRANSFER RECORD

Note: This is a four part form, please print using pen, pressing firmly - no dittos. Thank you.

WSSN/Project No.	Site Address	Owner/Company Name
TCWWTP	Cedar Run Rd.	TC/OMI

SAMPLER

Name of Sampler	Company
Liz Hunt	OMI

ANALYSIS INFORMATION

Cl⁻

Sample Point (Identification)	Sample Date	Sample Type	Sample Size	Rush Sample	No. of Containers						Other Analysis Required?
DEO	7-28-05	Grab	125ml		1	X					

MISC. INFORMATION

QUOTE #_____ **TEMPERATURE RECEIVED**_____

INVOICE TO: OMI

RESULTS TO: (Include Fax # and Phone #) OMI

E-mail:_____

If any samples are rush please indicate above. RUSH DUE DATE: _____

DELIVERED BY:

Relinquished by	Date	Time	Received By	Date	Time
J Stom	8-1-05	8:05A			
			Received in Lab S Shea	Date 8-1-05	Time 8:07 AM

SOS ANALYTICAL

4125 Cedar Run Rd., Suite B
Traverse City, MI 49684
Phone 231-946-6767
Fax 231-946-8741
www.sosanalytical.com

COMPANY:	OMI	SOS PROJECT NO:	053372 - 1
		SAMPLED BY:	LIZ HART/OMI
NAME:			
PROJECT NO:	TCWWTP	DATE RECEIVED:	8/1/05
WSSN:		TIME RECEIVED:	8:07 AM
WELL PERMIT:		SAMPLE ID:	DEQ
TAX ID:			
LOCATION:	606 FRANKLIN	DATE SAMPLED:	7/28/05
		TIME SAMPLED:	
	TRAVERSE CITY	SAMPLE MATRIX:	GRAB/WATER
	MI		
COUNTY:			
TWP:			

INORGANICS

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
CHLORIDE EPA 325.2	104	3	mg/L (PPM)	KMC	8/2/05	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER

SOS ANALYTICAL

CUSTODY TRANSFER RECORD

Note: This is a four part form, please print using pen, pressing firmly - no dittos. Thank you.

4125 Cedar Run Rd, Suite B
Traverse City, MI 49684
(231) 946-6767 · FAX (231) 946-8741

WSSN/Project No.	Site Address	Owner/Company Name
TCWWTP	Cedar Run Rd.	T.C. Water

SAMPLER

Name of Sampler	Company
J. Stout	OMI

ANALYSIS INFORMATION

Cl⁻

Sample Point (Identification)	Sample Date	Sample Type	Sample Size	Rush Sample	No. of Containers						Other Analysis Required?
DFO	7-28-05	Grab	125ml		1	X					

MISC. INFORMATION

QUOTE #_____ **TEMPERATURE RECEIVED**_____

INVOICE TO:	RESULTS TO: (Include Fax # and Phone #)
OMI	OMI

E-mail:_____

If any samples are rush please indicate above. RUSH DUE DATE: _____.

DELIVERED BY:

Relinquished by	Date	Time	Received By	Date	Time
J Stout	8-1-05	8:05A			
			Received in Lab J Shea	8-1-05	8:07A

CUSTODY TRANSFER RECORD

Note: This is a four part form, please print using pen, pressing firmly - no dittos. Thank you.

SOS ANALYTICAL
4125 Cedar Run Rd, Suite B
Traverse City, MI 49684
(231) 946-6767 • FAX (231) 946-8741

WSSN/Project No.	Site Address	Owner/Company Name
TcwnTP	Cedarrun Blvd St	T.C. Twp

SAMPLER

Name of Sampler	Company
Sy	DEQ

ANALYSIS INFORMATION

Cl-

Sample Point (Identification)	Sample Date	Sample Type	Sample Size	Rush Sample	No. of Containers						Other Analysis Required?
Value -01	8-10-05	Grab	500ml		1	X					
WRS-02	↓	↓	↓		1	X					
WRS-03	↓	↓	↓		1	X					

MISC. INFORMATION

QUOTE # _____ **TEMPERATURE RECEIVED** _____

INVOICE TO: OMI

RESULTS TO: (Include Fax # and Phone #) OMI

E-mail: _____

If any samples are rush please indicate above. RUSH DUE DATE: _____.

DELIVERED BY:

Relinquished by	Date	Time	Received By	Date	Time
Joseph K Sayer	2-15-05	10:28			
			Received in Lab: M. Schipiesay	8/15/05	10:28A

SOS ANALYTICAL

4125 Cedar Run Rd., Suite B
Traverse City, MI 49684
Phone 231-946-6767
Fax 231-946-8741
www.sosanalytical.com

COMPANY:	OMI	SOS PROJECT NO:	053857
		SAMPLED BY:	SY/DEQ
NAME:			
PROJECT NO:	TCWWTP		
WSSN:		DATE SAMPLED:	8/10/2005
WELL PERMIT:		TIME SAMPLED:	
TAX ID:			
LOCATION:	606 FRANKLIN	SAMPLE MATRIX:	GRAB/WATER
		DATE RECEIVED:	8/15/2005
	TRAVERSE CITY	TIME RECEIVED:	10:28 AM
	MI		
COUNTY:			
TWP:			

INORGANICS

No:	Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
SAMPLE ID: VALVE-01							
1	CHLORIDE EPA 325.2	2,000	15	mg/L (PPM)	KMC	8/16/2005	
SAMPLE ID: WRS-02							
2	CHLORIDE EPA 325.2	874	3	mg/L (PPM)	KMC	8/16/2005	
SAMPLE ID: WRS-03							
3	CHLORIDE EPA 325.2	180	3	mg/L (PPM)	KMC	8/16/2005	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
GMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER

SOS ANALYTICAL

4125 Cedar Run Rd., Suite B
Traverse City, MI 49684
Phone 231-946-6767
Fax 231-946-8741
www.sosanalytical.com

COMPANY:	OMI	SOS PROJECT NO:	053657
NAME:		SAMPLED BY:	SY/DEQ
PROJECT NO:	TCWWTP		
WSSN:		DATE SAMPLED:	8/10/2005
WELL PERMIT:		TIME SAMPLED:	
TAX ID:			
LOCATION:	606 FRANKLIN	SAMPLE MATRIX:	GRAB/WATER
		DATE RECEIVED:	8/15/2005
	TRAVERSE CITY	TIME RECEIVED:	10:28 AM
	MI		
COUNTY:			
TWP:			

RECEIVED
AUG 17 2005

INORGANICS

No: Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
SAMPLE ID: VALVE-01						
1 CHLORIDE EPA 325.2	2,000	15	mg/L (PPM)	KMC	8/16/2005	
SAMPLE ID: WRS-02						
2 CHLORIDE EPA 325.2	874	3	mg/L (PPM)	KMC	8/16/2005	
SAMPLE ID: WRS-03						
3 CHLORIDE EPA 325.2	180	3	mg/L (PPM)	KMC	8/16/2005	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER

CUST~DY TRANSFER RECORD

..ote: This is a four part form, please print using pen, pressing firmly - no dittos. Thank you.

SOS ANALYTICAL

4125 Cedar Run Rd, Suite B
Traverse City, MI 49684
(231) 946-6767 • FAX (231) 946-8741

RECEIVED AUG 1 7 2005

WSSN/Project No.	Site Address	Owner/Company Name
TCWWTP	Cass/Franklin St	T.C. / OMI

SAMPLER

Name of Sampler	Company
Sy	DEQ

ANALYSIS INFORMATION: Cl-

Sample Point (Identification)	Sample Date	Sample Type	Sample Size	Rush Sample	No. of Containers	Cl-					Other Analysis Required?
Valve -01	8-10-05	Grab	500ml		1	X					
WRS-02	↓	↓	↓		1	X					
WRS-03	↓	↓	↓		1	X					

MISC. INFORMATION

QUOTE #________ **TEMPERATURE RECEIVED**________

INVOICE TO: OMI

RESULTS TO: (Include Fax # and Phone #) OMI

E-mail:________

If any samples are rush please indicate above. RUSH DUE DATE: ________.

DELIVERED BY:

Relinquished by	Date	Time	Received By	Date	Time
Joseph K. Bro[illegible]	8-15-05	10:28			
			Received in Lab: N. Schopiesay	Date: 8/15/05	Time: 10:28A

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

WRS. White

MATRIX=WATER

LAB WORK ORDER # 50600065

SITE CODE NUMBER	SITE NAME	CIRCLE ONE:	3. NPDES
LB040160	Williamsburg Receiving & Storage		

DIVISION	DISTRICT/OFFICE	MDEQ PROJECT MANAGER	E-MAIL ADDRESS	PHONE	ACCEPT HT CODES? YES / NO If yes, which parameters?
WD	Cadillac District Office	Sy Paulik	spaulik@michigan.gov	231-775-3960 x 6267	

PRIMARY CONTACT PERSON	CONTRACT FIRM NAME (if applicable)	PHONE	AY:	INDEX: 37500	PCA: 79001
Janice Heuer	heuerj@michigan.gov	231-775-3960 x 6203	PROJECT:		PH:

OVERFLOW LAB (Required for Funded RRD & CMI samples)

1ST CHOICE:

2ND CHOICE:

E-MAIL ADDRESSES TO SEND ADDITIONAL REPORTS TO:

1.)

2.)

FINAL REPORT HAS BEEN SENT VIA E-MAIL

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY		SAMPLE DESCRIPTION	SAMPLE COLLECTED DATE MM/DD/YY	SAMPLE COLLECTED TIME MILITARY	COMMENTS
1	AA 56224	storm water pond	6/6/2005	1400	GN/GA/MN
2	AA 56225	storm water pond 1	6/6/2005	1401	directly by outlet
3	AA				
4	AA				
5	AA				
6	AA				
7	AA				
8	AA				
9	AA				
10	AA				

ORGANIC

1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

1 2 3 4 5 6 7 8 9 10

GN 1 2
Residue SS 1 2
Residue TDS 1 2

1 2 3 4 5 6 7 8 9 10

BOD Tot 5 day 1 2
BOD Carb 5 day 1 2
Turbidity 1 2

1 2 3 4 5 6 7 8 9 10

GA 1 2 3 4 5 6 7 8 9 10
TOC 1 2
NO3 + NO2, NH3 1 2
, Tot P 1 2

1 2 3 4 5 6 7 8 9 10

1 2 3 4 5 6 7 8 9 10

1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10

Share bottle MS 6/7/05

INORGANIC

1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10

1 2 3 4 5 6 7 8 9 10

1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10

1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10

1 2 3 4 5 6 7 8 9 10

MN pH, ~~Conductance~~ 1 2
Cl 1 2

Chain-of-Custody

RELEASED BY / ORGANIZATION	RECEIVED BY / ORGANIZATION	DATE	TIME
Print Name & Organization: Sy Paulik DEQ Cadillac	Print Name & Organization: Ross Quinlan	6/7/05	1255
Signature: Sy Paulik	Signature:		
Print Name & Organization	Print Name & Organization		
Signature	Signature		
Print Name & Organization	Print Name & Organization		
Signature	Signature		

JUL 8 2005

WKS

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL Q ITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

White

LAB WORK ORDER # 5070O033

MATRIX=WATER

SITE CODE NUMBER	SITE NAME	CIRCLE ONE:	3. NPDES
LB040160	Williamsburg Receiving & Storage		

DIVISION	DISTRICT/OFFICE	MDEO PROJECT MANAGER	E-MAIL ADDRESS	PHONE	ACCEPT HT CODES? YES / NO If yes, which parameters?
WB	Cadillac District Office	Sy Paulik	Pauliks@michigan.gov	231-775-3960 x 6267	

PRIMARY CONTACT PERSON	CONTRACT FIRM NAME (if applicable)	PHONE	AY:	INDEX: 37500	PCA: 79001
Janice Heuer	heuerj@michigan.gov	231-775-3960 x 6203	PROJECT:		PH:

OVERFLOW LAB (Required for Funded RRD & CMI samples)		E-MAIL ADDRESSES TO SEND ADDITIONAL REPORTS TO:
1ST CHOICE: Bill Buss	2ND CHOICE:	1.)
		2.)

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

	LAB USE ONLY	SAMPLE DESCRIPTION	SAMPLE COLLECTED DATE MM/DD/YY	SAMPLE COLLECTED TIME MILITARY	COMMENTS
1	AA	discharge in Paradi field	7/5/2005	2100	TDS & CL
2	AA				
3	AA				
4	AA				
5	AA				
6	AA				
7	AA				
8	AA				
9	AA				
10	AA				

ORGANIC | **GENERAL CHEMISTRY** | **INORGANIC**

GN

Residue TDS 1

MN

Cl 1

Chain-of-Custody

RELEASED BY / ORGANIZATION	RECEIVED BY / ORGANIZATION	DATE	TIME
Print Name & Organization: Sy Paulik - DEQ-WB Cadillac	Print Name & Organization: Scott Records DEQ	7/7/5	0910
Signature: Sy Paulik	Signature:		
Print Name & Organization:	Print Name & Organization:		
Signature:	Signature:		
Print Name & Organization:	Print Name & Organization:		
Signature:	Signature:		

CADILLAC
1877
TREE CITY
MICHIGAN

JUN 12 1996

June 10, 1996

David Porter
Michigan Dept. of Env. Quality
120 W. Chapin
Cadillac, MI 49601

Dear Mr. Porter,

Enclosed is the laboratory report for the cherry processing water sample. I saved the sample, and you may pick it up at your convenience. If you have any questions, please call me at 775-2368.

Sincerely,

Margaret Ruth
Environmental Chemist
Cadillac Utilities Dept.

CITY OF CADILLAC
LABORATORY SERVICES DIVISION

****

Client:
Michigan Dept. of Env. Quality
120 W. Chapin St.
Cadillac, MI 49601

Report Date: 06-10-96
Sample Rec'd: 05-31-96
Sample Taken: 05-30-96

ATTN: David Porter

****

Parameter	Concentration	Units
	Williamsburg Rec'd & Storage Cherry Processing Water	
Specific Conductance	860	uS
Biological Oxygen Demand	230	mg/L

Any questions should be directed to Margaret Ruth.

Approved:

CITY OF CADILLAC CHAIN OF CUSTODY

Address

DAVID PORTER
DEQ
120 W. CHADIN ST.
CADILLAC PH. 775-3960 EXT 6261

Project: _____
Turn around time: _____

Sampler's Name: _____
Sampler's Signature: _____

ANALYSIS REQUEST

Sample ID	Date	Time	Matrix	VOCS	METALS	BACTIS	OTHER	Sample Number	Comments/ Instructions	Num Containers
WILLIAMSBURG Recv'g & STORAGE	5/31/96	4:45 PM	Chem/~~MS~~ Processing Water				✓	3449		

Special Instructions/Comments:
(List each metal,
each type of bacti,
each type of voc scan)

BOD

Spec Cond.

Relinquished by:
Sign David R Porter
Print DAVID R. PORTER
Company DEQ
Time 9? Date 5/31/96

Received by:
Sign _____
Print Margaret Ruth
Company C. of Cad
Time 9:20 Date 5/31/96

Relinquished by:
Sign _____
Print _____
Company _____
Time _____ Date _____

Received by:
Sign _____
Print _____
Company _____
Time _____ Date _____

Sample Receipt

Total number of containers	
Rec'd good condition/cold	

Date ___/___/___ Page ___ of ___

BOD (mg)	x	Flow (MGD)	x	8.34	=	lbs
110	x	.216	x	8.34	=	198
120	x	.432	x	8.34	=	432
90	x	.432	x	8.34	=	162
120	x	.216	x	8.34	=	216

198
432
162
+ 216
4 | 1008
252 monthly av. lbs. BOD

ocation if different)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

AUG 16 1990

Form Approved.
OMB No. 2040-0004
Approval expires 6-30-91

RECEIVED-SWQD

AUG 15 1990

COMP. & ENF.

NOTE: Read instructions before completing this form.

PERMIT NUMBER (2-16)	DISCHARGE NUMBER (17-19)

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM				TO			
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
	SAMPLE MEASUREMENT	143	432						0	2/7	Grab
	PERMIT REQUIREMENT										GRAB
	SAMPLE MEASUREMENT				6.7		7.2		0	2/7	Grab
	PERMIT REQUIREMENT				6.0 MINIMUM		9.0 MAXIMUM			WEEKLY	GRAB
	SAMPLE MEASUREMENT	22.0	50.						0	2/7	Grab
	PERMIT REQUIREMENT										GRAB
	SAMPLE MEASUREMENT	155.400	432.00							Daily	rab
	PERMIT REQUIREMENT	REPORT	REPORT							DAILY	RECORDR
	SAMPLE MEASUREMENT	0	0							Daily	Visual
	PERMIT REQUIREMENT	REPORT	REPORT							DAILY	VISUAL
	SAMPLE MEASUREMENT		561								
	PERMIT REQUIREMENT		15200							ONCE/	CALCTD
	SAMPLE MEASUREMENT		427								
	PERMIT REQUIREMENT		8104							ONCE/	CALCTD

LE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
. Jensen ations, Michigan	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*	Quality Control	616-873-5628		90	8	10
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if different)*

NAME: [illegible] & Company

ADDRESS: [illegible] Angel Rd

[illegible]burg, MI [illegible]

FACILITY:

LOCATION:

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DISCHARGE MONITORING REPORT
DAILY MONITORING

MI 0044741	001 A
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	90	07	01	TO	90	07	31

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

[signature]	James R. Jensen V.P.
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	NAME/TITLE PRINCIPAL EXECUTIVE OFFICER TYPED OR PRINTED

DAY									
PAR #									
PARAMETER	BOD-5	pH	Susp. Solids	Flow	Outfall				
LIMIT		6.0 - 9.0							
UNITS	mg/l		mg/l	gal/day					
02									
03									
04									
05									
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
16				—					
17				216,000	none				
18	110	6.79	28	216,000					
19				432,000					
				270,000					
21	120	7.19	8	432,000					
22				432,000					
23				288,000					
24	90	7.20	10	432,000					
25				432,000					
26				432,000	none				
27				432,000					
28				432,000					
29	120	6.93	22	216,000					
30				—	—				
31				—	—				
TOTAL	440	28.11	68	4,662,000					
AVERAGE	110	7.03	17	155 400					

RECEIVED-SWQD

AUG 1 5 1990

COMP. & ENF

PR4612-1 12/86

phone 231.773.5998
toll-free 800.733.5998
fax 231.773.6537

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673
traceanalytical@mad.scientist.com

TRACE

Assurance
Accuracy
Accountability

July 22, 2002

Ms. Janice Heuer
MDEQ
120 W. Chapin St.
Cadillac, MI 49601

RE: TRACE ID CG093
MDEQ-ERD Project: #470791 Williamsburg Receiving

Dear Ms. Heuer::

Enclosed are the analytical results which represent the completed report for the above referenced project. All analyses were completed at Trace Analytical Laboratories, Inc.

The samples were received on July 10, 2002, in good condition, correctly labeled and properly preserved. Any problems encountered during sample receipt are addressed in the enclosed Sample Log-In Checklist.

Every practical effort was made to meet the quality control requirements of each analytical method, and the reporting limit specifications of the project.

The analytical data associated with this project have been reviewed for accuracy, precision, and completeness. Methods used for analyses are indicated on analytical reports. Any problems encountered during the handling and/or analyses of the samples have been addressed in the Statement of Data Qualifications Section. If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Ray V. Buhl
Laboratory Manager

Enclosures

phone 231.773.5998
toll-free 800.733.5998
fax 231.773.6537

Trace Analytical Laboratory, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673
traceanalytical@mad.scientist.com

TRACE

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Accuracy
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Ms. Janice Heuer
MDEQ
Project: #470791/Williamsburg Receiving

Trace ID: CG093-01
Sample ID: UPPER
% Solids: NA

Matrix: Water
Sample Date: 07/08/02
Sample Received: 07/10/02
Report Date: 07/22/02

PARAMETER	RESULTS		REPORTING LIMITS	UNITS	DLM	PREP DATE	ANALYZED	METHOD	BATCH ID
Biochemical Oxygen Demand	3100000		1000000	ug/L	500	07/10/02	07/15/02	EPA 405.1	BOD071001W
Chloride	630000		25000	ug/L	100		07/10/02	EPA 300.0	IC071001W
Sulfate	890000		35000	ug/L	100		07/10/02	EPA 300.0	IC071001W
Total Inorganic Nitrogen	13000	*	60	ug/L	3.0		07/19/02	EPA 353.2/350.1	TIN071901W
Total Phosphorus	4800		500	ug/L	25		07/17/02	EPA 365.2	PHS071701W
Total Sodium	270000		1000	ug/L	1.0	07/11/02	07/12/02	EPA 6010	MIC071103W

NOTE: Soil results are based on dry weight. Key: - # - Rerun U - Compound not detected J - Estimated value B - Analyte present in blank E - Exceeded the range of calibration X - Quantified from a previous run * - See narrative

phone 231.773.5998
toll-free 800.733.5998
fax 231.773.6537

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673
traceanalytical@mad.scientist.com

TRACE

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Accuracy
Accountability

Ms. Janice Heuer
MDEQ
Project: #470791/Williamsburg Receiving

Matrix: Water
Trace ID: CG093-02
Sample ID: LOWER
% Solids: NA
Sample Date: 07/08/02
Sample Received: 07/10/02
Report Date: 07/22/02

PARAMETER	RESULTS	REPORTING LIMITS	UNITS	DLM	PREP DATE	ANALYZED	METHOD	BATCH ID
Biochemical Oxygen Demand	3300000	1000000	ug/L	500	07/10/02	07/15/02	EPA 405.1	BOD071001W
Chloride	590000	25000	ug/L	100		07/10/02	EPA 300.0	IC071001W
Sulfate	1200000	35000	ug/L	100		07/10/02	EPA 300.0	IC071001W
Total Inorganic Nitrogen	16000	60	ug/L	3.0		07/19/02	EPA 353.2/350.1	TIN071901W
Total Phosphorus	5500	500	ug/L	25		07/17/02	EPA 365.2	PHS071701W
Total Sodium	270000	1000	ug/L	1.0	07/11/02	07/12/02	EPA 6010	MIC071103W

NOTE: Soil results are based on dry weight Key: - # - Rerun U - Compound not detected J - Estimated value B - Analyte present in blank E - Exceeded the range of calibration X - Quantified from a previous run * - See narrative

WRS - GTCo

OMI, Inc.
606 Franklin Street
Traverse City, MI 49686
Tel 231 922.4922
Fax 231 992.8170

OMI

September 11, 2002

Sy Paulik
MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

Dear Sy:

Enclosed please find the results for your water samples. Analyses were performed according to the "Standard Methods for Examination of Water and Wastewater," 18th Edition.

If you have any questions concerning this result, please feel free to contact our laboratory by phoning (231) 922-4922.

Sincerely,

Liz Hart
Lab Analyst

mf

Enclosure: Lab Report, Invoice

OPERATIONS MANAGEMENT INTERNATIONAL
TRAVERSE CITY WASTEWATER TREATMENT PLANT

ANALYTICAL LABORATORY REPORT

CLIENT: MDEQ **REPORT DATE:** Sept. 11, 2002

ADDRESS: Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

PROJECT: Williamsburg Results

Sample ID	Sample Date	Analysis Date	Analysis	Units	Result
Williamsburg Rec.& Stor.	8/23/02	8/25/02	BOD	mg/L	<20
Williamsburg Rec.& Stor.	8/23/02	8/27/02	Chloride	mg/L	44

Signature, Lab Analyst

OMI, Inc.
606 Franklin Street
Traverse City, MI 49686
Tel 231 922.4922
Fax 231 992.8170

OMI

INVOICE

MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac, MI 49601-2158

Date: Sept. 11, 2002
Project No. Williamsburg
Invoice No. MD002-08

Attn: Sy Paulik

This invoice is for laboratory analysis performed.

Sample Identification: Williamsburg samples August 23, 2002.

(1) BOD analysis @ $20.00	$20.00
(1) Chloride analysis @ $15.00	$15.00
SUBTOTAL	**$ 35.00**
TOTAL AMOUNT DUE	**$ 35.00**

Due and Payable Upon Receipt

Please send your remittance to:

Operations Management International, Inc.
606 Franklin Street
Traverse City, MI 49686

phone 231.773.5998
toll-free 800.733.5998
fax 231.773.6537

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673
traceanalytical@mad.scientist.com

TRACE

Assurance
Accuracy
Accountability

RECEIVED
JUL 23 2002
WMD-CADILLAC

July 22, 2002

Ms. Janice Heuer
MDEQ
120 W. Chapin St.
Cadillac, MI 49601

RE: TRACE ID CG093
MDEQ-ERD Project: #470791/ Williamsburg Receiving

Dear Ms. Heuer::

Enclosed are the analytical results which represent the completed report for the above referenced project. All analyses were completed at Trace Analytical Laboratories, Inc.

The samples were received on July 10, 2002, in good condition, correctly labeled and properly preserved. Any problems encountered during sample receipt are addressed in the enclosed Sample Log-In Checklist.

Every practical effort was made to meet the quality control requirements of each analytical method, and the reporting limit specifications of the project.

The analytical data associated with this project have been reviewed for accuracy, precision, and completeness. Methods used for analyses are indicated on analytical reports. Any problems encountered during the handling and/or analyses of the samples have been addressed in the Statement of Data Qualifications Section. If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Ray V. Buhl
Laboratory Manager

Enclosures

phone 231.773.5998
toll-free 800.733.5998
fax 231.773.6537

Trace Analytical Laboratori c.
2241 Black Creek Road
Muskegon, MI 49444-2673
traceanalytical@mad.scientist.com

TRACE

Assurance
Accuracy
Accountability

TRACE ID CG093
MDEQ-ERD Project: #470791/ Williamsburg Receiving

CROSS REFERENCE TABLE

MDEQ ID	TRACE ID
Upper	CG093-01
Lower	CG093-02

phone 231.773.5998
toll-free 800.733.5998
fax 231.773.6537

Trace Analytical Laboratori c.
2241 Black Creek Road
Muskegon, MI 49444-2673
traceanalytical@mad.scientist.com

TRACE

Assurance
Accuracy
Accountability

TRACE ID CG093
MDEQ-ERD Project: #470791/ Williamsburg Receiving

ANALYTICAL RESULTS
STATEMENT OF DATA QUALIFICATIONS

TRACE ID:	CG093-01	**Sample ID:**	Upper
Parameter:	Total Inorganic Nitrogen	**Method:**	EPA 353.2/350.1

Qualifier: *

Explanation:
The matrix spike and matrix spike duplicate recoveries were out of control low for the nitrate/nitrite portion of this analysis.

Qualification/Narrative:
The result and reporting limit for this analyte, in the non-spiked version of the sample, must be considered estimated.

phone 231.773.5998
toll-free 800.733.5998
fax 231.773.6537

Trace Analytical Laboratori c.
2241 Black Creek Road
Muskegon, MI 49444-2673
traceanalytical@mad.scientist.com

TRACE

Assurance
Accuracy
Accountability

TRACE ID CG093
MDEQ-ERD Project: #470791/ Williamsburg Receiving

QUALITY CONTROL RESULTS
STATEMENT OF DATA QUALIFICATIONS

Quality control data which did not meet specifications, but had no impact on actual sample data, are narrated on the individual quality control reports.

The QA/QC results associated with the analysis of these samples have been reviewed by Mr. Ray V. Buhl. To the best knowledge of the signer, the QA/QC data are complete and accurate. The review was completed July 22, 2002.

TRACE ANALYTICAL LABORATORIES, Inc.

Ray V. Buhl
Laboratory Manager

Chain of Custody Form(s)
Sample Log-in Checklist(s)

DEQ 7/24

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

See Over CG093 80

LAB ORDER # MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES / NO
WMD	Cadillac	Janice Heuer	

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA	PROJECT	PH
Williamsburg Receiving	33820	47004	470791	(none)

COLLECTED BY	PHONE	ADDITIONAL REPORT
Janice Heuer	231) 775-3960 ext 6203	TO ATTENTION OF
OVERFLOW CONTRACT LAB (Required for ERD)		AT (ADDRESS) (If different than above office)
Truck		

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	COMMENTS
1	upper	7/8/02	1:00	
2	lower	7/8/02	1:00	two liters mixed because of color difference
3				
4				
5				
6				
7				
8				
9				
10				

RECEIVED
JUL 23 2002
WMD CADILLAC

ORGANIC

VOA VOLATILES (624/8260)
Full List 1 2 3 4 5 6 7 8 9 10
BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

ON PESTICIDES/PCBS (608/8081/8082)
Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
Pesticides only 1 2 3 4 5 6 7 8 9 10
PCBs only 1 2 3 4 5 6 7 8 9 10
****** NPDES ONLY ******
Scan 3 (NPDES Only) 1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (625/8270)
BNAs 1 2 3 4 5 6 7 8 9 10
PNAs only 1 2 3 4 5 6 7 8 9 10
BNs only 1 2 3 4 5 6 7 8 9 10
ACIDs only 1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS
Library Search (Qualitative)
Volatiles 1 2 3 4 5 6 7 8 9 10
Semivolatiles 1 2 3 4 5 6 7 8 9 10
Other
_____ 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

DO Diss Oxygen 1 2 3 4 5 6 7 8 9 10

GN NO_3, o-Phos 1 2 3 4 5 6 7 3 9 10
Residue SS 1 2 3 4 5 6 7 8 9 10
Residue TDS 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10
BOD Tot 5 day 1 2 3 4 5 6 7 8 9 10
BOD Carb 5 day 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10

CA Chlorophyll 1 2 3 4 5 6 7 8 9 10

GA COD 1 2 3 4 5 6 7 8 9 10
TOC 1 2 3 4 5 6 7 8 9 10
NO3 + NO2 NH3 1 2 3 4 5 6 7 8 9 10
KJEL N, Tot P 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10

GG Phenolics 1 2 3 4 5 6 7 8 9 10
GP Phenolics (NPDES) 1 2 3 4 5 6 7 8 9 10

GB Total CN 1 2 3 4 5 6 7 8 9 10
Amenable CN 1 2 3 4 5 6 7 8 9 10

INORGANIC

MA Total Metals 1 2 3 4 5 6 7 8 9 10
MAD Diss-Field Filtered 1 2 3 4 5 6 7 8 9 10
MD Diss-Lab Filtered 1 2 3 4 5 6 7 8 9 10

Quantification Limit High Low
MICH TEN METALS 1 2 3 4 5 6 7 8 9 10
(As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)
Fe Co Li Mn 1 2 3 4 5 6 7 8 9 10
Al Be Mo Ti V 1 2 3 4 5 6 7 8 9 10
B Sr 1 2 3 4 5 6 7 8 9 10
Ni - Nickel 1 2 3 4 5 6 7 8 9 10

Sb - Antimony 1 2 3 4 5 6 7 8 9 10
Tl - Thallium 1 2 3 4 5 6 7 8 9 10
Ca Mg Na K 1 2 3 4 5 6 7 8 9 10
Hardness 1 2 3 4 5 6 7 8 9 10

MN pH, Conductance 1 2 3 4 5 6 7 8 9 10
Cl, SO_4, Total Alk 1 2 3 4 5 6 7 8 9 10
HCO_3, CO_3 1 2 3 4 5 6 7 8 9 10
Cr^{+6} 1 2 3 4 5 6 7 8 9 10

OG Oil & Grease 1 2 3 4 5 6 7 8 9 10

Chain-of-Custody	BOTTLE / TESTS	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
		1) Janice Heuer / MDEQ	T. Huck	7/10/02 10:40
		2)		

about 1 1/2 liter of each sample has no preservative. Use for Nitrate, nitrite, BOD, Chloride, sulfate as needed

WRS: 01-CD ~~See Back~~

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

LAB ORDER #

MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES / NO
WMD	Cadillac	Janice Heuer	

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA	PROJECT	PH
Williamsburg Receiving	33820	47004	470791	(none)

COLLECTED BY: Janice Heuer

PHONE: ext 6203 231) 775-3960

ADDITIONAL REPORT TO ATTENTION OF

AT (ADDRESS) (If different than above office)

OVERFLOW CONTRACT LAB (Required for ERD): Trace

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	TIME	COMMENTS
1	upper	7/8/02	1:00	
2	lower	7/8/02	1:00	two liters mixed because of color difference
3				
4				
5				
6				
7				
8				
9				
10				

ORGANIC

VOA	VOLATILES (624/8260)	
	Full List	1 2 3 4 5 6 7 8 9 10
	BTEX/MTBE only	1 2 3 4 5 6 7 8 9 10
ON	PESTICIDES/PCBS (608/8081/8082)	
	Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10
	Pesticides only	1 2 3 4 5 6 7 8 9 10
	PCBs only	1 2 3 4 5 6 7 8 9 10
	****** NPDES ONLY******	
	Scan 3 (NPDES Only)	1 2 3 4 5 6 7 8 9 10
BNA	BASE NEUTRAL & ACIDS (625/8270)	
	BNAs	1 2 3 4 5 6 7 8 9 10
	PNAs only	1 2 3 4 5 6 7 8 9 10
	BNs only	1 2 3 4 5 6 7 8 9 10
	ACIDs only	1 2 3 4 5 6 7 8 9 10
	SPECIAL REQUESTS	
	Library Search (Qualitative)	
	Volatiles	1 2 3 4 5 6 7 8 9 10
	Semivolatiles	1 2 3 4 5 6 7 8 9 10
	Other ________	1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

DO	Diss Oxygen	1 2 3 4 5 6 7 8 9 10
GN	NO_2, o-Phos	1 2 3 4 5 6 7 8 9 10
	Residue SS	1 2 3 4 5 6 7 8 9 10
	Residue TDS	1 2 3 4 5 6 7 8 9 10
	________	1 2 3 4 5 6 7 8 9 10
	BOD Tot 5 day	(1 2) 3 4 5 6 7 8 9 10
	BOD Carb 5 day	1 2 3 4 5 6 7 8 9 10
	________	1 2 3 4 5 6 7 8 9 10
CA	Chlorophyll	1 2 3 4 5 6 7 8 9 10
GA	COD	1 2 3 4 5 6 7 8 9 10
	TOC	1 2 3 4 5 6 7 8 9 10
	(NO3 + NO2, NH3)	(1 2) 3 4 5 6 7 8 9 10
	KJEL N, (Tot P)	(1 2) 3 4 5 6 7 8 9 10
	________	1 2 3 4 5 6 7 8 9 10
GG	Phenolics	1 2 3 4 5 6 7 8 9 10
GP	Phenolics (NPDES)	1 2 3 4 5 6 7 8 9 10
GB	Total CN	1 2 3 4 5 6 7 8 9 10
	Amenable CN	1 2 3 4 5 6 7 8 9 10

INORGANIC

MA	Total Metals	1 2 3 4 5 6 7 8 9 10
MAD	Diss-Field Filtered	1 2 3 4 5 6 7 8 9 10
MD	Diss-Lab Filtered	1 2 3 4 5 6 7 8 9 10
	Quantification Limit	High Low
	MICH TEN METALS (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)	1 2 3 4 5 6 7 8 9 10
	Fe Co Li Mn	1 2 3 4 5 6 7 8 9 10
	Al Be Mo Ti V	1 2 3 4 5 6 7 8 9 10
	B Sr	1 2 3 4 5 6 7 8 9 10
	Ni - Nickel	1 2 3 4 5 6 7 8 9 10
	Sb - Antimony	1 2 3 4 5 6 7 8 9 10
	Tl - Thallium	1 2 3 4 5 6 7 8 9 10
	Ca Mg (Na) K	(1 2) 3 4 5 6 7 8 9 10
	Hardness	1 2 3 4 5 6 7 8 9 10
MN	pH, Conductance	1 2 3 4 5 6 7 8 9 10
	(Cl, SO_4), Total Alk	(1 2) 3 4 5 6 7 8 9 10
	HCO_3, CO_3	1 2 3 4 5 6 7 8 9 10
	Cr^{+6}	1 2 3 4 5 6 7 8 9 10
OG	Oil & Grease	1 2 3 4 5 6 7 8 9 10

Chain-of-Custody	BOTTLE / TESTS	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
		1) Janice Heuer / MDEQ		
		2)		

about 1 1/2 liter of each sample has no preservative. Use for nitrate, nitrite, BOD, chloride, sulfate as needed

See Safety Section "Back of Form," page 2

Revised January, 2000

SAMPLE LOG IN CHECKLIST

Date: 7-10-02 C Name: DEQ # of Coolers: 1

HPN #: Project Name: Cooler #s:

Project #: CG093 Logged in by: T. Huck Cooler #s:

Cooler Receipt

Cooler/samples delivered by: Trace courier ☐ Hand delivered ☐ Commercial courier ☒ Name of delivery person: UPS Name of courier service:

Did cooler come with a bill of lading? No ☒ Yes ☐ Way Bill or Tracking #:

COC Seals present and intact on cooler? No ☒ Yes ☐ Custody seals signed by: Client COC number: Type of packing in cooler:

Coolant and Temperature

Type of Coolant Used

	Yes	No
Slurry w/ crushed, cubed, or chip ice?	☐	☐
Multiple bags of ice around samples?	☐	☐
Ice Packs/ Blue Ice :	☒	☐
No Coolant Present:		☐

Temperature (as taken in Cooler)

Date: 7-10-02 Time: 10:40

Temperature Blank: °C

Range of 3 samples: 9 °C

Melt Water: °C

Ice still present upon receipt: ☒ Yes ☐ No

General

	Yes	No	NA
COC taped to inside of cooler lid?	☐	☒	☐
All bottles arrived unbroken with labels in good condition?	☒	☐	☐
Each sample is in a sealed plastic bag?	☒	☐	☐
Labels filled out completely?	☒	☐	☐
All bottle labels agree with Chain of Custody (COC)?	☒	☐	☐
Sufficient sample to run tests requested?	☒	☐	☐
pH checked and samples at correct pH?	☐	☐	☒
Correct preservative added to samples?	☒	☐	☐
Soil volatiles received and appropriate check in form completed?	☐	☐	☒
Air bubbles absent from VOAs?	☐	☐	☒
COC filled out properly and signed by client?	☒	☐	☐
COC signed in by TRACE sample custodian?	☒	☐	☐
Was project manager called and samples discussed?	☐	☐	☐

Contact: Date:

Notes:

phone 231.773.5998
toll-free 800.733.5998
fax 231.773.6537

Trace Analytical Laboratories, Inc.
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traceanalytical@mad.scientist.com

TRACE
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Sample Results

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Ms. Janice Heuer
MDEQ
Project: #470791/Williamsburg Receiving

Trace ID: CG093-01
Sample ID: UPPER
% Solids: NA

Matrix: Water
Sample Date: 07/08/02
Sample Received: 07/10/02
Report Date: 07/22/02

PARAMETER	RESULTS		REPORTING LIMITS	UNITS	DLM	PREP DATE	ANALYZED	METHOD	BATCH ID
Biochemical Oxygen Demand	3100000		1000000	ug/L	500	07/10/02	07/15/02	EPA 405.1	BOD071001W
Chloride	630000		25000	ug/L	100		07/10/02	EPA 300.0	IC071001W
Sulfate	890000		35000	ug/L	100		07/10/02	EPA 300.0	IC071001W
Total Inorganic Nitrogen	13000	*	60	ug/L	3.0		07/19/02	EPA 353.2/350.1	TIN071901W
Total Phosphorus	4800		500	ug/L	25		07/17/02	EPA 365.2	PHS071701W
Total Sodium	270000		1000	ug/L	1.0	07/11/02	07/12/02	EPA 6010	MIC071103W

NOTE: Soil results are based on dry weight Key: - # - Rerun U - Compound not detected J - Estimated value B - Analyte present in blank E - Exceeded the range of calibration X - Quantified from a previous run * - See narrative

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Ms. Janice Heuer
MDEQ
Project: #470791/Williamsburg Receiving

Trace ID: CG093-02
Sample ID: LOWER
% Solids: NA

Matrix: Water
Sample Date: 07/08/02
Sample Received: 07/10/02
Report Date: 07/22/02

PARAMETER	RESULTS	REPORTING LIMITS	UNITS	DLM	PREP DATE	ANALYZED	METHOD	BATCH ID
Biochemical Oxygen Demand	3300000	1000000	ug/L	500	07/10/02	07/15/02	EPA 405.1	BOD071001W
Chloride	590000	25000	ug/L	100		07/10/02	EPA 300.0	IC071001W
Sulfate	1200000	35000	ug/L	100		07/10/02	EPA 300.0	IC071001W
Total Inorganic Nitrogen	16000	60	ug/L	3.0		07/19/02	EPA 353.2/350.1	TIN071901W
Total Phosphorus	5500	500	ug/L	25		07/17/02	EPA 365.2	PHS071701W
Total Sodium	270000	1000	ug/L	1.0	07/11/02	07/12/02	EPA 6010	MIC071103W

NOTE: Soil results are based on dry weight Key: - # - Rerun U - Compound not detected J - Estimated value B - Analyte present in blank E - Exceeded the range of calibration X - Quantified from a previous run * - See narrative

Quality Control Results

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Ms. Janice Heuer
MDEQ
Project: #470791/Williamsburg Receiving

Matrix: Water
Trace ID: CG093 WB071001
Sample ID: Method Blank
% Solids: NA
Sample Date:
Sample Received:
Report Date: 07/22/02

PARAMETER	RESULTS	REPORTING LIMITS	UNITS	DLM	PREP DATE	ANALYZED	METHOD	BATCH ID
Biochemical Oxygen Demand	U	2000	ug/L	1.0	07/10/02	07/15/02	EPA 405.1	BOD071001W
Chloride	U	10000	ug/L	1.0		07/10/02	EPA 300.0	IC071001W
Sulfate	U	1000	ug/L	1.0		07/10/02	EPA 300.0	IC071001W

NOTE: Soil results are based on dry weight Key: - # - Rerun U - Compound not detected J - Estimated value B - Analyte present in blank E - Exceeded the range of calibration X - Quantified from a previous run * - See narrative

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Quality Control Report for Wet Chemistry

BOD

Trace LCS ID:	WS/WSD071001
QC Batch ID:	BOD071001W
Analysis Date:	07/10/02
MS/MSD ID:	NA
Method:	405.1

Parameter	Method Blank Result (µg/L)	LCS Spk. Added (µg/L)	LCSD Spk. Added (µg/L)	LCS Result (µg/L)	LCSD Result (µg/L)	LCS % Recovery	LCSD % Recovery	RPD	% Recovery	RPD
BOD	U	198000	198000	215000	215000	109	109	0	85 - 115	31

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Quality Control Report for Wet Chemistry

Chloride

Trace LCS ID:	WS/WSD071001
QC Batch ID:	IC071001W
Analysis Date:	07/10/02
MS/MSD ID:	CG093-01 MS/MSD
Method:	300.0

Parameter	Method Blank Result (µg/L)	LCS Spk. Added (µg/L)	LCSD Spk. Added (µg/L)	LCS Result (µg/L)	LCSD Result (µg/L)	LCS % Recovery	LCSD % Recovery	RPD	% Recovery	RPD
Chloride	U	1000	1000	1011	967.6	101	97	4.0	90 - 110	20

Parameter	Sample Conc. (µg/L)	MS Spk. Added (µg/L)	MSD Spk. Added (µg/L)	MS Result (µg/L)	MSD Result (µg/L)	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD
Chloride	629759	100000	100000	712389	674040	83	44 *	61 *	80 - 120	20

Chloride

* The matrix spike duplicate recovery was out of control, resulting in an out of control RPD between the matrix spike and matrix spike duplicate. Because the background concentration of this analyte is greater than four times the spike amount, no data require qualification.

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Quality Control Report for Wet Chemistry

Sulfate

Trace LCS ID:	WS/WSD071001
QC Batch ID:	IC071001W
Analysis Date:	07/10/02
MS/MSD ID:	CG093-01 MS/MSD
Method:	300.0

Parameter	Method Blank Result (µg/L)	LCS Spk. Added (µg/L)	LCSD Spk. Added (µg/L)	LCS Result (µg/L)	LCSD Result (µg/L)	LCS % Recovery	LCSD % Recovery	RPD	% Recovery	RPD
Sulfate	U	2500	2500	2564	2391	103	96	7.0	90 - 110	20

Parameter	Sample Conc. (µg/L)	MS Spk. Added (µg/L)	MSD Spk. Added (µg/L)	MS Result (µg/L)	MSD Result (µg/L)	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD
Sulfate	892582	1000000	1000000	1888453	1955475	100	106	5.8	80 - 120	20

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Ms. Janice Heuer
MDEQ
Project: #470791/Williamsburg Receiving

Trace ID: CG093 WB071701
Sample ID: Method Blank
% Solids: NA

Matrix: Water
Sample Date:
Sample Received:
Report Date: 07/22/02

PARAMETER	RESULTS	REPORTING LIMITS	UNITS	DLM	PREP DATE ANALYZED	METHOD	BATCH ID
Total Phosphorus	U	20	ug/L	1.0	07/17/02	EPA 365.2	PHS071701W

NOTE. Soil results are based on dry weight Key: - # - Rerun U - Compound not detected J - Estimated value B - Analyte present in blank E - Exceeded the range of calibration X - Quantified from a previous run * - See narrative

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Quality Control Report for Wet Chemistry

Phosphorus

Trace LCS ID:	WS/WSD071701
QC Batch ID:	PHS071701W
Analysis Date:	7/17/02
MS/MSD ID:	CG162-02 MS/MSD
Method:	365.2

Parameter	Method Blank Result (µg/L)	LCS Spk. Added (µg/L)	LCSD Spk. Added (µg/L)	LCS Result (µg/L)	LCSD Result (µg/L)	LCS % Recovery	LCSD % Recovery	RPD	% Recovery	RPD
Phosphorus	U	640	640	657	687.6	103	107	3.8	94 - 107	5.2

Parameter	Sample Conc. (µg/L)	MS Spk. Added (µg/L)	MSD Spk. Added (µg/L)	MS Result (µg/L)	MSD Result (µg/L)	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD
Phosphorus	173.9	640	640	820.1	820.1	101	101	0	75 - 134	12

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Ms. Janice Heuer
MDEQ
Project: #470791/Williamsburg Receiving

Trace ID: CG093 WB071103
Sample ID: Method Blank
% Solids: NA

Matrix: Water
Sample Date:
Sample Received:
Report Date: 07/22/02

PARAMETER	RESULTS	REPORTING LIMITS	UNITS	DLM	PREP DATE	ANALYZED	METHOD	BATCH ID
Total Sodium	U	1000	ug/L	1.0	07/11/02	07/12/02	EPA 6010	MIC071103W

NOTE. Soil results are based on dry weight Key: - # - Rerun U - Compound not detected J - Estimated value B - Analyte present in blank E - Exceeded the range of calibration X - Quantified from a previous run * - See narrative

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Laboratory Control Spike Recovery and RPD Summary Report

Trace LCS ID: WS/WSD071103
QC Batch ID: MIC071103W
Digestion Date: 7/11/02

								QC Limits		
Analyte	Method Blank Result ug/l	Spk. Added ug/l	LCS Results ug/l	LCSD Results ug/l	LCS %Rec	LCSD %Rec	RPD	RPD	%Rec	Method
Sodium	U	8889	9116	8984	103	101	2.0	20	80 - 120	6010

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Matrix Spike Recovery and RPD Summary Report

Trace ID : CG093-01 MS/MSD
QC Batch ID: MIC071103W
Digestion Date: 7/11/02
Matrix: Water

									QC Limits		
Analyte	Sample Conc. ug/l	MS Spk Added ug/l	MSD Spk Added ug/l	MS Results ug/l	MSD Results ug/l	**MS %Rec**	**MSD %Rec**	**RPD**	RPD	%Rec	Method
Sodium	265200	8889	8889	272600	294000	**83**	**324** *	**118** *	20	75 - 125	6010

Sodium * The matrix spike duplicate recovery was out of control, resulting in an out of control RPD between the matrix spike and matrix spike duplicate. Because the background concentration of this analyte is greater than four times the spike amount, no data require qualification.

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Ms. Janice Heuer
MDEQ
Project: #470791/Williamsburg Receiving

Matrix: Water
Trace ID: CG093 WB071901
Sample ID: Method Blank
% Solids: NA
Sample Date:
Sample Received:
Report Date: 07/22/02

PARAMETER	RESULTS	REPORTING LIMITS	UNITS	DLM	PREP DATE	ANALYZED	METHOD	BATCH ID
Total Inorganic Nitrogen	U	40	ug/L	1.0		07/19/02	EPA 353.2/350.1	TIN071901W

NOTE: Soil results are based on dry weight Key: - # - Rerun U - Compound not detected J - Estimated value B - Analyte present in blank E - Exceeded the range of calibration X - Quantified from a previous run * - See narrative

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TRACE
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Quality Control Report for Wet Chemistry

Ammonia Nitrogen

Trace LCS ID:	WS/WSD071601
QC Batch ID:	AMM071601W
Analysis Date:	07/16/02
MS/MSD ID:	CG128-01 MS/MSD
Method:	350.1

Parameter	Method Blank Result (µg/L)	LCS Spk. Added (µg/L)	LCSD Spk. Added (µg/L)	LCS Result (µg/L)	LCSD Result (µg/L)	LCS % Recovery	LCSD % Recovery	RPD	% Recovery	RPD
Ammonia	U	1000	1000	1055	1053	106	105	0.95	90 - 110	11

Parameter	Sample Conc. (µg/L)	MS Spk. Added (µg/L)	MSD Spk. Added (µg/L)	MS Result (µg/L)	MSD Result (µg/L)	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD
Ammonia	220.3	2000	2000	2116	2113	95	95	0	90 - 110	14

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TRACE
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Quality Control Report for Wet Chemistry

Nitrate-Nitrite Nitrogen

Trace LCS ID:	WS/WSD071201
QC Batch ID:	ATE071201W
Analysis Date:	07/12/02
MS/MSD ID:	CG093-01 MS/MSD
Method:	353.2

Parameter	Method Blank Result (µg/L)	LCS Spk. Added (µg/L)	LCSD Spk. Added (µg/L)	LCS Result (µg/L)	LCSD Result (µg/L)	LCS % Recovery	LCSD % Recovery	RPD	% Recovery	RPD
Nitrate-Nitrite	U	1000	1000	956.7	957.9	96	96	0	90 - 110	20

Parameter	Sample Conc. (µg/L)	MS Spk. Added (µg/L)	MSD Spk. Added (µg/L)	MS Result (µg/L)	MSD Result (µg/L)	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD
Nitrate-Nitrite	U	1000	1000	594.9	592.6	59 *	59 *	0	90 - 110	20

Nitrate-Nitrite

*The matrix spike and matrix spike duplicate recoveries were out of control low. The reporting limit for this analyte in the non-spiked version of the sample must be considered estimated.

SOS ANALYTICAL

4125 Cedar Run Rd. Suite B
Traverse City, MI 49684
Phone 231-946-6767
Fax 231-946-8741
www.sosanalytical.com

September 6, 2002

Mr. Andrew Smits
Inland Seas Engineering, Inc.
P.O. Box 6820
Traverse City, MI 49696

Dear Mr. Smits:

SOS Analytical, Inc. has recently realized a technical error in the Total Phosphorus tests. The results are generated by an automated method that is calibrated using a standard phosphorus solution. Prior to April 4, 2002 the stock standard used to prepare a standard curve and calibrate the instrument was 1000 ppm as P. Since April 4, 2002, a standard phosphate (PO_4^{3-}) solution has been used to calibrate the system. The system was calibrated using a phosphate standard and reported the same concentration as phosphorus (as P). This caused the Total Phosphorus values to be approximately 3.067 times higher than actual because the ratio of P to PO_4^{3-} is 0.3261.

$$\frac{\text{M.W. P}}{\text{M.W. } PO_4^{3-}} = \frac{30.974 \text{ g/mol}}{94.93 \text{ g/mol}} = 32.6\%$$

All Total Phosphorus as PO_4^{3-} values reported to Inland Seas Engineering since April 4, 2002 will be recalculated to represent Total Phosphorus as P, in mg/L. The following is a partial list of SOS Project Numbers (sample test identity) that have been recalculated and reprinted.

SOS Project Number			
020671-1	022212	022451-1	022537-1
021249-1	022369-1	022468	022579-1
021250-1	022399	022492-1	022657
021250-2	022413-1	022492-1	022761
021785-1	022432-1	022513-1	022777

We regret the oversight, and have corrected this error.

Sincerely,

Shanna Shea

Shanna Shea
Lab Manager, SOS Analytical, Inc.

SOS ANALYTICAL

4125 Cedar Run Road, Suite B
Traverse City, MI 49684
voice: (231) 946-6767
fax: (231) 946-8741

SOSanalytical.com

COMPANY:	WILLIAMSBURG R & S	SOS PROJECT NO:	023825 - 1
		SAMPLED BY::	TIM GATES/ISE
NAME:			
PROJECT NO:	02399084-03E	DATE RECEIVED:	10/31/02
WSSN:		TIME RECEIVED:	11:05 AM
WELL PERMIT:		SAMPLE ID:	MUNRO ROAD OUTFALL
TAX ID:			
LOCATION:	MUNRO RD.	DATE SAMPLED:	10/31/02
		TIME SAMPLED:	
	WILLIAMSBURG	SAMPLE MATRIX:	WATER
	MI		
COUNTY:			
TWP:			

INORGANICS/WET CHEMISTRY

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
BOD 5-DAY EPA 405.1	<200	200	mg/L (PPM)	KMC	11/6/02	
CHLORIDE EPA 325.2	3	1	mg/L (PPM)	KMC	11/5/02	
PHOSPHORUS-TOTAL EPA 365.4M	ND	0.25	mg/L (PPM)	KMC	10/31/02	
SODIUM - EPA 273.1	3.05	0.5	mg/L (PPM)	KJ	11/4/02	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: _____
SHANNA SHEA
LAB MANAGER

Williamsburg Rec
+ Std
G.T. Co

ZCZC COOPSITES 000
TTAA00 KARB 251341

----------"THIS IS PRELIMINARY DATA"----------
PLEASE NOTE - THE COOPERATIVE OBSERVATIONAL DATA LISTED BELOW IS
VALID FOR THE 24 HOUR PERIOD ENDING AT 7AM EST ON THE DATE SHOWN.
THIS IS PRELIMINARY DATA FROM OBSERVERS AND MAY BE ADJUSTED LATER.
THIS DATA IS "PRELIMINARY DATA" ALL OFFICIAL DATA COMES FROM THE
NATIONAL CLIMATIC DATA CENTER (NCDC) AVAILABLE AT THEIR WEB-SITE.

COOP SITE DATA AT ALPENA, MI (ALPM4) BACKUP (~=ASOS)
DT/MAX/MIN/PRECIP/MONTHLY/YEARLY/SNOWFALL/MONTHLY/SEASONAL/DEPTH

APRIL 2005

01	53	36	T	T	6.47	T	T	109.4	1
02	54	31	0.00	T	6.47	0.0	T	109.4	T
03	49	32	0.00	T	6.47	0.0	T	109.4	T
04	54	29	0.00	T	6.47	0.0	T	109.4	T
05	59	30	0.00	T	6.47	0.0	T	109.4	T
06	60	37	0.00	T	6.47	0.0	T	109.4	0
07	52	37	0.09	0.09	6.56	0.0	T	109.4	0
08	58	32	T	0.09	6.56	0.0	T	109.4	0
09	56	26	0.00	0.09	6.56	0.0	T	109.4	0
10	62	27	0.00	0.09	6.56	0.0	T	109.4	0
11	60	32	0.00	0.09	6.56	0.0	T	109.4	0
12	47	34	0.00	0.09	6.56	0.0	T	109.4	0
13	49	26	0.00	0.09	6.56	0.0	T	109.4	0
14	57	31	0.00	0.09	6.56	0.0	T	109.4	0
15	52	26	0.00	0.09	6.56	0.0	T	109.4	0
16	57	30	0.00	0.09	6.56	0.0	T	109.4	0
17	72	34	0.00	0.09	6.56	0.0	T	109.4	0
18	68	33	0.00	0.09	6.56	0.0	T	109.4	0
19	70	35	0.00	0.09	6.56	0.0	T	109.4	0
20	84	43	0.59	0.68	7.15	T	T	109.4	0
21	47	30	0.11	0.79	7.26	0.0	T	109.4	0
22	51	28	0.00	0.79	7.26	0.0	T	109.4	0
23	55	29	T	0.79	7.26	T	T	109.4	0
24	34	29	0.44	1.23	7.70	5.2	5.2	114.6	5
25	33	29	0.53	1.76	8.23	5.0	10.2	119.6	7

*TRACE SNOWFALL ON THE 20TH DUE TO HAIL OCCURRING AT THE STATION

COOP SITE DATA AT HOUGHTON LAKE, MI(SWLM4)BACKUP(*=HTLM4)(~=ASOS)
DT/MAX/MIN/PRECIP/MONTHLY/YEARLY/SNOWFALL/MONTHLY/SEASONAL/DEPTH

APRIL 2005

01	48	29	0.02	0.02	6.76	0.0	0.0	70.7	0
02	56	30	0.00	0.02	6.76	0.0	0.0	70.7	0
03	51	29	0.00	0.02	6.76	0.0	0.0	70.7	0
04	53	28	0.00	0.02	6.76	0.0	0.0	70.7	0
05	63	27	0.00	0.02	6.76	0.0	0.0	70.7	0
06	75	38	0.00	0.02	6.76	0.0	0.0	70.7	0
07	65	38	0.03	0.05	6.79	0.0	0.0	70.7	0
08	61	26	0.00	0.05	6.79	0.0	0.0	70.7	0
09	62	27	0.00	0.05	6.79	0.0	0.0	70.7	0
10	66	27	0.00	0.05	6.79	0.0	0.0	70.7	0
11	69	34	0.00	0.05	6.79	0.0	0.0	70.7	0
12	60	35	0.00	0.05	6.79	0.0	0.0	70.7	0
13	55	32	0.00	0.05	6.79	0.0	0.0	70.7	0

14	62	32	0.00	0.05	6.79	0.0	0.0	70.7	0
15	63	28	0.00	0.05	6.79	0.0	0.0	70.7	0
16	65	32	0.00	0.05	6.79	0.0	0.0	70.7	0
17	74	36	0.00	0.05	6.79	0.0	0.0	70.7	0
18	70	40	0.00	0.05	6.79	0.0	0.0	70.7	0
19	78	42	0.00	0.05	6.79	0.0	0.0	70.7	0
20	83	47	0.45	0.50	7.24	0.0	0.0	70.7	0
21	57	30	T	0.50	7.24	0.0	0.0	70.7	0
22	60	28	0.00	0.50	7.24	0.0	0.0	70.7	0
23	53	31	T	0.50	7.24	T	T	70.7	0
24	34	28	0.14	0.64	7.38	0.9	0.9	71.6	1
25	35	28	0.14	0.78	7.52	T	0.9	71.6	T

COOP SITE DATA AT SAULT STE MARIE, MI (SSMM4) BACKUP(~=ASOS)
DT/MAX/MIN/PRECIP/MONTHLY/YEARLY/SNOWFALL/MONTHLY/SEASONAL/DEPTH

APRIL 2005

01	44	33	0.32	0.32	3.54	T	T	82.0	7
02	53	28	0.00	0.32	3.54	0.0	T	82.0	5
03	47	22	0.00	0.32	3.54	0.0	T	82.0	3
04	47	24	0.00	0.32	3.54	0.0	T	82.0	T
05	52	28	T	0.32	3.54	0.0	T	82.0	T
06	57	38	0.03	0.35	3.57	0.0	T	82.0	T
07	50	35	0.60	0.95	4.17	0.0	T	82.0	T
08	52	26	0.00	0.95	4.17	0.0	T	82.0	T
09	56	27	0.00	0.95	4.17	0.0	T	82.0	T
10	64	30	0.00	0.95	4.17	0.0	T	82.0	0
11	62	34	0.00	0.95	4.17	0.0	T	82.0	0
12	54	33	0.00	0.95	4.17	0.0	T	82.0	0
13	56	23	0.00	0.95	4.17	0.0	T	82.0	0
14	57	24	0.00	0.95	4.17	0.0	T	82.0	0
15	61	28	0.00	0.95	4.17	0.0	T	82.0	0
16	62	31	0.00	0.95	4.17	0.0	T	82.0	0
17	67	36	0.03	0.98	4.20	0.0	T	82.0	0
18	67	30	0.00	0.98	4.20	0.0	T	82.0	0
19	74	36	0.00	0.98	4.20	0.0	T	82.0	0
20	80	44	0.25	1.23	4.45	0.0	T	82.0	0
21	54	26	0.00	1.23	4.45	0.0	T	82.0	0
22	58	28	0.00	1.23	4.45	0.0	T	82.0	0
23	58	26	0.03	1.26	4.48	0.4	0.4	82.4	T
24	43	27	0.02	1.28	4.50	0.2	0.6	82.6	0
25	41	32	0.22	1.50	4.72	T	0.6	82.6	0

COOP SITE DATA AT TRAVERSE CITY, MI(TCMM4)BACKUP(*=NWFM4)(~=ASOS)
DT/MAX/MIN/PRECIP/MONTHLY/YEARLY/SNOWFALL/MONTHLY/SEASONAL/DEPTH

APRIL 2005

01	53	31	0.12	0.12	5.00	0.0	0.0	75.6	0
02	55	31	0.00	0.12	5.00	0.0	0.0	75.6	0
03	51	30	0.00	0.12	5.00	0.0	0.0	75.6	0
04	52	29	0.00	0.12	5.00	0.0	0.0	75.6	0
05	55	29	0.00	0.12	5.00	0.0	0.0	75.6	0
06	76	42	0.00	0.12	5.00	0.0	0.0	75.6	0
07	73	39	0.00	0.12	5.00	0.0	0.0	75.6	0
08	52	30	0.00	0.12	5.00	0.0	0.0	75.6	0
09	56	30	0.00	0.12	5.00	0.0	0.0	75.6	0
10	65	36	0.00	0.12	5.00	0.0	0.0	75.6	0
11	72	36	0.00	0.12	5.00	0.0	0.0	75.6	0
12	69	40	0.00	0.12	5.00	0.0	0.0	75.6	0
13	64	29	0.00	0.12	5.00	0.0	0.0	75.6	0

14	56	30	0.00	0.12	5.00	0.0	0.0	75.6	0
15	57	30	0.00	0.12	5.00	0.0	0.0	75.6	0
16	61	30	0.00	0.12	5.00	0.0	0.0	75.6	0
17	74	40	T	0.12	5.00	0.0	0.0	75.6	0
18	63	40	0.00	0.12	5.00	0.0	0.0	75.6	0
19	79	40	0.00	0.12	5.00	0.0	0.0	75.6	0
20	84	53	0.76	0.88	5.76	0.0	0.0	75.6	0
21	54	31	0.00	0.88	5.76	0.0	0.0	75.6	0
22	55	32	0.00	0.88	5.76	0.0	0.0	75.6	0
23	52	31	0.11	0.99	5.87	0.5	0.5	76.1	T
24	33	30	0.20	1.19	6.07	1.0	1.5	77.1	1
25	39	31	0.38	1.57	6.45	T	1.5	77.1	0

COOP SITE DATA AT GAYLORD, MI (APXM4) BACKUP(~=ASOS)
DT/MAX/MIN/PRECIP/MONTHLY/YEARLY/SNOWFALL/MONTHLY/SEASONAL/DEPTH

APRIL 2005

01	47	33	0.13	0.13	6.55	T	T	118.8	T
02	54	31	0.00	0.13	6.55	0.0	T	118.8	0
03	49	27	0.00	0.13	6.55	0.0	T	118.8	0
04	48	28	0.00	0.13	6.55	0.0	T	118.8	0
05	58	30	0.00	0.13	6.55	0.0	T	118.8	0
06	73	36	0.00	0.13	6.55	0.0	T	118.8	0
07	69	36	0.01	0.14	6.56	0.0	T	118.8	0
08	58	34	0.00	0.14	6.56	0.0	T	118.8	0
09	60	34	0.00	0.14	6.56	0.0	T	118.8	0
10	68	37	0.00	0.14	6.56	0.0	T	118.8	0
11	70	36	0.00	0.14	6.56	0.0	T	118.8	0
12	58	32	0.00	0.14	6.56	0.0	T	118.8	0
13	56	29	0.00	0.14	6.56	0.0	T	118.8	0
14	59	31	0.00	0.14	6.56	0.0	T	118.8	0
15	60	35	0.00	0.14	6.56	0.0	T	118.8	0
16	67	36	0.00	0.14	6.56	0.0	T	118.8	0
17	73	42	T	0.14	6.56	0.0	T	118.8	0
18	71	47	0.00	0.14	6.56	0.0	T	118.8	0
19	76	49	0.00	0.14	6.56	0.0	T	118.8	0
20	80	49	0.86	1.00	7.42	0.0	T	118.8	0
21	49	31	0.06	1.06	7.48	0.0	T	118.8	0
22	61	34	0.00	1.06	7.48	0.0	T	118.8	0
23	56	27	0.04	1.10	7.52	0.3	0.3	119.1	T
24	31	26	0.13	1.23	7.65	1.3	1.6	120.4	1
25	32	26	0.29	1.52	7.94	4.9	6.5	126.9	5

$$

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Division: WB
Report to: SY PAULIK
MDEQ-WB-CADILLAC
CADILLAC DISTRICT OFFICE
120 W. CHAPIN STREET, CADILLAC, MI 49601

Total: $274.60

Lab Work Order # : 50600065
Work Site ID : LB040160
Site Name : WILLIAMSBURG RECEIVI
Received: 06/07/2005
Reported: 06/29/2005
Collected By:

Samples Received :

No:	Sample ID	Sample Description	Matrix:	Collection Date
01	AA56224	STORM WATER POND (Grand Haven)	WATER	06/06/2005
02	AA56225	STORM WATER POND 1 (Ivanhoe)	WATER	06/06/2005

I certify that the analysis performed by the MDEQ Environmental Laboratory are accurate and that the laboratory tests were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Bob Avery, Laboratory Director

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Sample Number AA56224 STORM WATER POND

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
16887006	Chloride	524	mg/L	1	D	06/09/2005	325.2	LU
	BOD - Carbonaceous 5 days	1300	mg/L	2		06/08/2005	405.1	GW
	BOD - Total 5 days	1400	mg/L	2		06/08/2005	405.1	GW
TDS	Solids - Total Dissolved	2700	mg/L	20	A	06/10/2005	160.1	TK
	KN TP - Digestion	Completed				06/13/2005	351.2	DS1
7723-14-0	Total Phosphorus	2.9	mg P/L	0.010		06/13/2005	365.4	DS1
7664-41-7	Ammonia	2.8	mg N/L	0.01		06/09/2005	350.1	RA
7727-37-9	Nitrate + Nitrite	0.1	mg N/L	0.01	D	06/09/2005	353.2	RA
	Conductance	2627	umhos/cm			06/08/2005	120.1	RM
	pH	6.63	pH			06/07/2005	150.1	RS
	Solids - Suspended	290	mg/L	4		06/09/2005	160.2	TK
7440-44-0	TOC	590	mg/L	0.5	D	06/10/2005	415.1	MB
	Turbidity	120	NTU	1		06/08/2005	180.1	GW

Sample Number AA56225 STORM WATER POND 1

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
16887006	Chloride	518	mg/L	1	D	06/09/2005	325.2	LU
	BOD - Carbonaceous 5 days	3700	mg/L	2	H	06/08/2005	405.1	GW
	BOD - Total 5 days	3600	mg/L	2	8 H	06/08/2005	405.1	GW
TDS	Solids - Total Dissolved	4300	mg/L	20	A	06/10/2005	160.1	TK
	Conductance	2638	umhos/cm			06/08/2005	120.1	RM
	pH	5.67	pH			06/07/2005	150.1	RS
	Solids - Suspended	240	mg/L	4		06/09/2005	160.2	TK
	Turbidity	90	NTU	1		06/08/2005	180.1	GW

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Qualifier Code	Qualifier Description
1	Result(s) and RL(s) are estimated due to low surrogate recovery.
2	Result is estimated due to high surrogate recovery.
3	Result(s) and RL(s) are estimated due to low matrix spike recovery.
4	Result is estimated due to high matrix spike recovery.
5	Result and RL are estimated due to low continuing calibration standard criteria failure.
6	Result is estimated due to high continuing calibration standard criteria failure.
7	Result(s) and RL(s) are estimated due to poor precision.
8	Result(s) and RL(s) are estimated due to low recovery of batch QC.
9	Result outside QC acceptance criteria.
A	Value reported is the mean of two or more determinations.
C	Value calculated from other independent parameters.
D	Analyte value quantified from a dilution(s); reporting limit (RL) raised.
E	Result is estimated due to high recovery of batch QC.
F	Free cyanide was not analyzed due to low level of total cyanide.
G	Result and RL are estimated due to initial calibration standard criteria failure.
H	Recommended laboratory holding time was exceeded.
I	Dilution required due to matrix interference; reporting limit (RL) raised.
J	Analyte was positively identified. Value is an estimate.
JA	Result is estimated due to multiple Aroclors present.
JC	Result is estimated since confirmation analysis did not meet acceptance criteria
JD	Due to severe degradation, specific Aroclor identification is difficult and quantitation is estimated.
K	RL(s) raised due to matrix interferences.
KR	RL(s) raised due to low sample volume submitted.
KS	RL(s) raised due to low total solids.
KW	RL(s) raised due to light sample weight.
LB	Reported library search compounds are tentative identifications with estimated concentrations.
M	The level of the method preparation blank (MPB) is reported in the qualifier column.
N	Non-homogeneous sample made analysis of sample questionable.
O	Result and RL estimated due to analysis from an open vial.
P	Recommended sample collection/preservation technique not used; reported result(s) is an estimate.
Q	Quantity of sample insufficient to perform analyses requested.
R	Result confirmed by re-extraction and analysis.
S	Supernatant analyzed.
T	Reported value is less than the reporting limit (RL). Result is estimated.
V	Value not available due to dilution.
W	Reported value is less than the method detection limit (MDL).
X	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200°C. 2-Methylnaphthalene & naphthalene have boiling points above 200°C and are better suited to analysis by methods 8270 or 625 as semivolatile organics.
PI	Possible interference may have affected the accuracy of the laboratory result
Z	Result reported below the RL to meet the TDL in RRD Op Memo 2 (10/22/04) multiplied by applicable dilution factor.

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

PAGE: 1 MDEQ AQD QBE -- UNNAMED 07/01/2005

QUERY DEFINITION: 1. STATE REGISTRATION NUMBER equal to "MISC-00264"
2. DATE OF INCIDENT/EVENT from 06/01/2005 to 07/01/2005

GROUPING EXPRESSION: 1 AND 2

This query has produced 46 records out of a total of 708 COMPLAIN records (6.5%).

June 2005

PLANT NAME	DATE OF INCIDENT	COMPL. NAME	COMPL. STREET
WILLIAMSBURG RECEIVING AND STO	06/01/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/02/2005	NLA BOALS	10091 MONRO
WILLIAMSBURG RECEIVING AND STO	06/03/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/03/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/04/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/06/2005	DENNIS FOX	10423 ELK LAKE RD
WILLIAMSBURG RECEIVING AND STO	06/09/2005	NOLA BOALS	10091
WILLIAMSBURG RECEIVING AND STO	06/09/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/10/2005	ANNONYMOUS	
WILLIAMSBURG RECEIVING AND STO	06/10/2005	GERALDINE CLOUSE	ANGELL RD
WILLIAMSBURG RECEIVING AND STO	06/12/2005	MIKE MATEN	11274 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/13/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/13/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/13/2005	RENADA WILSON	ANGEL RD
WILLIAMSBURG RECEIVING AND STO	06/13/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/14/2005	ANNONYMOUS	
WILLIAMSBURG RECEIVING AND STO	06/14/2005	DENNIS FOX	10423 ELK LAKE RD
WILLIAMSBURG RECEIVING AND STO	06/19/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/20/2005	DENNIS FOX	10423 ELK LAKE RD
WILLIAMSBURG RECEIVING AND STO	06/21/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/22/2005	NOLA BOLES	10091 MUNROE ROAD
WILLIAMSBURG RECEIVING AND STO	06/22/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/23/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/24/2005	ROBIN BUSTANCE	10329 ELK LAKE RD
WILLIAMSBURG RECEIVING AND STO	06/24/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/24/2005	STEVE RYBARSYK	11518 CLEARVIEW DR
WILLIAMSBURG RECEIVING AND STO	06/25/2005	DENNIS FOX	10423 ELK LAKE RD
WILLIAMSBURG RECEIVING AND STO	06/25/2005	ROBIN BUSTANCE	10329 ELK LAKE RD
WILLIAMSBURG RECEIVING AND STO	06/25/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/26/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/26/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/26/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/26/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/26/2005	NOLABOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/26/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/27/2005	DEBRA MCKEON	9916 ELK LAKE TRAIL
WILLIAMSBURG RECEIVING AND STO	06/27/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/27/2005	ROBIN BUSTANCE	10326 ELK LAKE RD
WILLIAMSBURG RECEIVING AND STO	06/27/2005	ROBIN BUSTANCE	10329 ELK LAKE RD
WILLIAMSBURG RECEIVING AND STO	06/27/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/27/2005	STEVE RYBARSYK	11518 CLEARVIEW DR
WILLIAMSBURG RECEIVING AND STO	06/28/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	06/29/2005	JACKIE SMITH	10347 ELK LAKE RD
WILLIAMSBURG RECEIVING AND STO	06/29/2005	ROBIN BUSTANCE	10329 ELK LAKE RD
WILLIAMSBURG RECEIVING AND STO	06/30/2005	GERALDINE CLOUSE	10010 ELK LAKE TRAIL
WILLIAMSBURG RECEIVING AND STO	06/30/2005	LYNN VANDENKER	9936 ELK LAKE TRAIL

PAGE: 1 MDEQ AQD QBE -- WRS 07/01/2005

QUERY DEFINITION: 1. STATE REGISTRATION NUMBER equal to "MISC-00264"
2. DATE OF INCIDENT/EVENT from 01/01/2005 to 05/30/2005

GROUPING EXPRESSION: 1 AND 2

This query has produced 9 records out of a total of 708 COMPLAIN records (1.3%).

PLANT NAME	DATE OF INCIDENT	COMPL. NAME	COMPL. STREET
WILLIAMSBURG RECEIVING AND STO	02/28/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	04/08/2005	PATRICIA PLUCKER	11115 SUMMERTIME TRAIL
WILLIAMSBURG RECEIVING AND STO	04/09/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	04/10/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	04/13/2005	NOLA BOLES	10091 MUNRO ROAD
WILLIAMSBURG RECEIVING AND STO	04/14/2005	NOLA BOALS	10091 MUNRO
WILLIAMSBURG RECEIVING AND STO	04/17/2005	ROBERTA KOLAK	10100 ELK LAKE TRAIL
WILLIAMSBURG RECEIVING AND STO	05/20/2005	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	05/28/2005	SANDY KINNEE	10125 MUNRO

January → May, 2005

QUERY DEFINITION: 1. STATE REGISTRATION NUMBER equal to "MISC-00264"
2. DATE OF INCIDENT/EVENT from 01/01/2004 to 12/31/2004

GROUPING EXPRESSION: 1 AND 2

This query has produced 6 records out of a total of 708 COMPLAIN records (0.8%).

PLANT NAME	DATE OF INCIDENT	COMPL. NAME	COMPL. STREET
WILLIAMSBURG RECEIVING AND STO	07/02/2004	ROBIN BUSTANCE	10329 ELK LAKE ROAD
WILLIAMSBURG RECEIVING AND STO	07/25/2004	ROBIN BUSTANCE	10329 ELK LAKE RD
WILLIAMSBURG RECEIVING AND STO	07/26/2004	NOLA BOALS	10091 MUNRO RD
WILLIAMSBURG RECEIVING AND STO	07/26/2004	SANDY KINNEE	10125 MUNRO
WILLIAMSBURG RECEIVING AND STO	10/27/2004	NOLA BOALS	MUNRO ROAD
WILLIAMSBURG RECEIVING AND STO	11/19/2004	NOLA BOLES	10091 MUNRO ROAD

2004

QUERY DEFINITION: 1. STATE REGISTRATION NUMBER equal to "MISC-00264"
2. DATE OF INCIDENT/EVENT from 01/01/2003 to 12/31/2003

GROUPING EXPRESSION: 1 AND 2

This query has produced 2 records out of a total of 708 COMPLAIN records (0.3%).

PLANT NAME	DATE OF INCIDENT	COMPL. NAME	COMPL. STREET
WILLIAMSBURG RECEIVING AND STO	10/09/2003	NOLA BOALS	10091 MUNRO RD
WILLIAMSBURG RECEIVING AND STO	10/10/2003	SANDY KINNEY	MUNRO RD

2003

OMI, Inc.
606 Franklin Street
Traverse City, MI 49686
Tel 231 922.4922
Fax 231 992.8170

OMI

September 14, 2005

Sy Paulik
MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

Dear Sy:

Enclosed please find the results for your water samples. Analyses were performed according to the "Standard Methods for Examination of Water and Wastewater," 18th Edition.

If you have any questions concerning this result, please feel free to contact our laboratory by phoning (231) 922-4922.

Sincerely,

Liz Hart
Lab Analyst

Enclosure: Lab Report, Invoice

OPERATIONS MANAGEMENT INTERNATIONAL
TRAVERSE CITY WASTEWATER TREATMENT PLANT

ANALYTICAL LABORATORY REPORT

CLIENT: MDEQ **REPORT DATE:** 09/14/05

ADDRESS: Cadillac District Office
120 W. Chapin St.
Cadillac MI 49601-2158

PROJECT:

Sample ID	Sample Date	Analysis	Units	Result	
None	7/28/05	Chloride	Mg/L	104	"stormwater" pond
		BOD	Mg/L	*	
Valve 01	8/10/05	Chloride	Mg/L	2,000	
		BOD	Mg/L	17,967	valve pit
		NH3	Mg/L	14.6	
WRS 02	8/10/05	Chloride	Mg/L	874	pit east of lagoons
WRS 03	8/10/05	Chloride	Mg/L	180	
		BOD	Mg/L	703	stormwater pond
		NH3	Mg/L	.171	

*Results	Dilution 1%	Mg/L
	.5	385
	.3	396
	.1	1,090
	.03	3.800

Signature, Lab Analyst

INVOICE

MDEQ
Cadillac District Office
120 W. Chapin St.
Cadillac, MI 49601-2158

Date: September 14, 2005
Project No. TRAVE916001
Invoice No.

Attn: Sy Paulik

This invoice is for laboratory analysis performed.

Sample Identification: Valve 01, Valve 02
WRS 02, WRS 03

(4) Chloride analysis	@ $15.00	$60.00
(3) NH3 analysis	@ $10.00	$30.00
(2) BOD analysis	@ $20.00	$40.00

TOTAL AMOUNT DUE **$ 130.00**

Due and Payable Upon Receipt

Please send your remittance to:

Operations Management International, Inc.
606 Franklin Street
Traverse City, MI 49686

SOS ANALYTICAL

4125 Cedar Run Rd., Suite B
Traverse City, MI 49684
Phone **231-946-6767**
Fax 231-946-8741
www.sosanalytical.com

COMPANY:	OMI	SOS PROJECT NO:	053372 - 1
NAME:		SAMPLED BY:	LIZ HART/OMI
PROJECT NO:	TCWWTP	DATE RECEIVED:	8/1/05
WSSN:		TIME RECEIVED:	8:07 AM
WELL PERMIT:		SAMPLE ID:	DEQ
TAX ID:			
LOCATION:	606 FRANKLIN	DATE SAMPLED:	7/28/05
		TIME SAMPLED:	
	TRAVERSE CITY MI	SAMPLE MATRIX:	GRAB/WATER
COUNTY:			
TWP:			

INORGANICS

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
CHLORIDE EPA 325.2	104	3	mg/L (PPM)	KMC	8/2/05	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER

SOS ANALYTICAL

CUSTODY TRANSFER RECORD

Note: This is a four part form, please print using pen, pressing firmly - no dittos. Thank you.

4125 Cedar Run Rd, Suite B
Traverse City, MI 49684
(231) 946-6767 • FAX (231) 946-8741

WSSN/Project No.	Site Address	Owner/Company Name
TCWWTP	Cedar Run Rd.	TC/OTT

SAMPLER

Name of Sampler	Company
Liz Stout	OTT

ANALYSIS INFORMATION

Cl⁻

Sample Point (Identification)	Sample Date	Sample Type	Sample Size	Rush Sample	No. of Containers						Other Analysis Required?
DEO	7-28-05	Grab	125ml		1	X					

MISC. INFORMATION

QUOTE #_____ **TEMPERATURE RECEIVED**_____

INVOICE TO:	RESULTS TO: (Include Fax # and Phone #)
OTT	OTT

E-mail:_____

If any samples are rush please indicate above. RUSH DUE DATE: _____.

DELIVERED BY:

Relinquished by	Date	Time	Received By	Date	Time
J Stout	8-1-05	8:05A			
			Received in Lab: Shea	8-1-05	8:07AM

SOS ANALYTICAL

4125 Cedar Run Rd., Suite B
Traverse City, MI 49684
Phone 231-946-6767
Fax 231-946-8741
www.sosanalytical.com

COMPANY:	OMI	SOS PROJECT NO:	053372 - 1
		SAMPLED BY:	LIZ HART/OMI
NAME:			
PROJECT NO:	TCWWTP	DATE RECEIVED:	8/1/05
WSSN:		TIME RECEIVED:	8:07 AM
WELL PERMIT:		SAMPLE ID:	DEQ
TAX ID:			
LOCATION:	606 FRANKLIN	DATE SAMPLED:	7/28/05
		TIME SAMPLED:	
	TRAVERSE CITY MI	SAMPLE MATRIX:	GRAB/WATER
COUNTY:			
TWP:			

INORGANICS

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
CHLORIDE EPA 325.2	104	3	mg/L (PPM)	KMC	8/2/05	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER

SOS ANALYTICAL

CUSTODY TRANSFER RECORD

Note: This is a four part form, please print using pen, pressing firmly - no dittos. Thank you.

4125 Cedar Run Rd, Suite B
Traverse City, MI 49684
(231) 946-6767 • FAX (231) 946-8741

WSSN/Project No.	Site Address	Owner/Company Name
TCWWTP	[illegible]	[illegible]

SAMPLER

Name of Sampler	Company
[illegible]	[illegible]

ANALYSIS INFORMATION

Cl

No. of Containers

Sample Point (Identification)	Sample Date	Sample Type	Sample Size	Rush Sample							Other Analysis Required?
DI-C	7.28.05	[illegible]	125ml		1	X					

MISC. INFORMATION

QUOTE #_____ **TEMPERATURE RECEIVED**_____

INVOICE TO:

[illegible]

RESULTS TO: (Include Fax # and Phone #)

[illegible]

E-mail:_____

If any samples are rush please indicate above. RUSH DUE DATE: _____.

DELIVERED BY:

Relinquished by	Date	Time	Received By	Date	Time
J Stow	8.1.05	8:05A			
			Received in Lab J Shea	8-1-05	8:07AM

SOS ANALYTICAL

CUSTODY TRANSFER RECORD

Note: This is a four part form, please print using pen, pressing firmly - no dittos. Thank you.

4125 Cedar Run Rd, Suite B
Traverse City, MI 49684
(231) 946-6767 • FAX (231) 946-8741

WSSN/Project No.	Site Address	Owner/Company Name

SAMPLER

Name of Sampler	Company

ANALYSIS INFORMATION

No. of Containers

Sample Point (Identification)	Sample Date	Sample Type	Sample Size	Rush Sample							Other Analysis Required?
			101								
			2.000		17,967						11.6
			874								
			180		703						.171

MISC. INFORMATION

QUOTE #_____ **TEMPERATURE RECEIVED**_____

INVOICE TO:

RESULTS TO: (Include Fax # and Phone #)

E-mail:_____

If any samples are rush please indicate above. RUSH DUE DATE: _____.

DELIVERED BY:

Relinquished by	Date	Time	Received By	Date	Time
J STOW	8.1.05	8:05A			
			Received in Lab	Date	Time

SOS ANALYTICAL

CUSTODY TRANSFER RECORD

Note: This is a four part form, please print using pen, pressing firmly - no dittos. Thank you.

4125 Cedar Run Rd, Suite B
Traverse City, MI 49684
(231) 946-6767 · FAX (231) 946-8741

WSSN/Project No.	Site Address	Owner/Company Name
TcwwTP	Cedarmill St	T.C. / ONE

SAMPLER

Name of Sampler	Company
Sy	DEQ

ANALYSIS INFORMATION

Cl-

No. of Containers

Sample Point (Identification)	Sample Date	Sample Type	Sample Size	Rush Sample							Other Analysis Required?
Value-Cl	9/15/05	Grab	50ml		1	X					
WRS-02	↓	↓	↓		1	X					
WRS-03	↓	↓	↓		1	X					

MISC. INFORMATION

QUOTE #_____ **TEMPERATURE RECEIVED**_____

INVOICE TO:
ONE

RESULTS TO: (Include Fax # and Phone #)
ONE

E-mail:_____

If any samples are rush please indicate above. RUSH DUE DATE: _____.

DELIVERED BY:

Relinquished by	Date	Time	Received By	Date	Time
Joseph V. Sinon	2-15-05	10:28			
			Received in Lab (N. Schipiere)	8/15/05	10:28A

CUSTODY TRANSFER RECORD

Note: This is a four part form, please print using pen, pressing firmly - no dittos. Thank you.

SOS ANALYTICAL
4125 Cedar Run Rd, Suite B
Traverse City, MI 49684
(231) 946-6767 · FAX (231) 946-8741

WSSN/Project No.	Site Address	Owner/Company Name
Trout	[illegible]	[illegible]

SAMPLER

Name of Sampler	Company
[illegible]	[illegible]

ANALYSIS INFORMATION

Sample Point (Identification)	Sample Date	Sample Type	Sample Size	Rush Sample	No. of Containers						Other Analysis Required?
[illegible]					1	X					
[illegible]	↓	↓	↓		1	X					
[illegible]	↓	↓	↓		1	X					

MISC. INFORMATION

QUOTE #_____ **TEMPERATURE RECEIVED**_____

INVOICE TO: [illegible]

RESULTS TO: (Include Fax # and Phone #) [illegible]

E-mail:_____

If any samples are rush please indicate above. RUSH DUE DATE: _____.

DELIVERED BY:

Relinquished by	Date	Time	Received By	Date	Time
[illegible]	1-15-15	12:25			
			Received in Lab	Date	Time
			[illegible]	1-15-15	1:35

SOS ANALYTICAL

4125 Cedar Run Rd., Suite B
Traverse City, MI 49684
Phone 231-946-6767
Fax 231-946-8741
www.sosanalytical.com

COMPANY: OMI
NAME:
PROJECT NO: TCWWTP
WSSN:
WELL PERMIT:
TAX ID:
LOCATION: 606 FRANKLIN
TRAVERSE CITY
MI
COUNTY:
TWP:

SOS PROJECT NO: 053657
SAMPLED BY: SY/DEQ
DATE SAMPLED: 8/10/2005
TIME SAMPLED:
SAMPLE MATRIX: GRAB/WATER
DATE RECEIVED: 8/15/2005
TIME RECEIVED: 10:28 AM

INORGANICS

No: Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
SAMPLE ID: VALVE-01						
1 CHLORIDE EPA 325.2	2,000	15	mg/L (PPM)	KMC	8/16/2005	
SAMPLE ID: WRS-02						
2 CHLORIDE EPA 325.2	874	3	mg/L (PPM)	KMC	8/16/2005	
SAMPLE ID: WRS-03						
3 CHLORIDE EPA 325.2	180	3	mg/L (PPM)	KMC	8/16/2005	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER

SOS ANALYTICAL

4125 Cedar Run Rd., Suite B
Traverse City, MI 49684
Phone **231-946-6767**
Fax 231-946-8741
www.sosanalytical.com

COMPANY:	OMI	SOS PROJECT NO:	053657
		SAMPLED BY:	SY/DEQ
NAME:			
PROJECT NO:	TCWWTP		
WSSN:		DATE SAMPLED:	8/10/2005
WELL PERMIT:		TIME SAMPLED:	
TAX ID:			
LOCATION:	606 FRANKLIN	SAMPLE MATRIX:	GRAB/WATER
		DATE RECEIVED:	8/15/2005
	TRAVERSE CITY	TIME RECEIVED:	10:28 AM
	MI		
COUNTY:			
TWP:			

RECEIVED
AUG 17 2005

INORGANICS

No:	Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
SAMPLE ID: VALVE-01							
1	CHLORIDE EPA 325.2	2,000	15	mg/L (PPM)	KMC	8/16/2005	
SAMPLE ID: WRS-02							
2	CHLORIDE EPA 325.2	874	3	mg/L (PPM)	KMC	8/16/2005	
SAMPLE ID: WRS-03							
3	CHLORIDE EPA 325.2	180	3	mg/L (PPM)	KMC	8/16/2005	

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER

SOS ANALYTICAL

CUSTODY TRANSFER RECORD

ote: is a four part form, please print using pen, pressing firmly - no dittos. Thank you.

4125 Cedar Run Rd, Suite B
Traverse City, MI 49684
(231) 946-6767 · FAX (231) 946-8741

WSSN/Project No.	Site Address	Owner/Company Name
TcwwTP	Cold Fram Blin St	T.C. / OMI

SAMPLER

Name of Sampler	Company
Sy	DEQ

ANALYSIS INFORMATION: Cl

Sample Point (Identification)	Sample Date	Sample Type	Sample Size	Rush Sample	No. of Containers	Cl						Other Analysis Required?
Valve -01	8-10-05	Grab	500ml		1	X						
WRS-02	↓	↓	↓		1	X						
WRS-03	↓	↓	↓		1	X						

MISC. INFORMATION

QUOTE #________ **TEMPERATURE RECEIVED**________

INVOICE TO: OMI

RESULTS TO: (Include Fax # and Phone #) OMI

E-mail:________

If any samples are rush please indicate above. RUSH DUE DATE: ________.

DELIVERED BY:

Relinquished by	Date	Time	Received By	Date	Time
Joseph V. Brown	8-15-05	10:28			
			Received in Lab N. Schopieray	8/15/05	10:28A

Typical Brine Recipe

Water	5000 gallons	41700	pounds
Sodium Bisulfite		1200	
Calcium Chloride		1500	
Cherries		45000	

Chemical Proportions

		Sodium	Hydrogen	Sulfur	Oxygen	
Soduim	Mol Wt.	14	1	32	48	95
Bisulfite	Percent	15%	1%	34%	51%	1

NaHSO3

		Calcium	Chloride		
Calcium					
Chloide	Mol Wt.	40	35.4	75.4	
CaCl2	Percent	53%	47%	100%	

Weight Percent

Sodium	0.424	
Calcium	1.908	
Chloride	1.689	
Total	4.02	by weight

Williamsburg Rec. + Storage
GT. Co

Date: 8/3/04

To: Janice Heuer
Water Div, Cadillac

Attached is a copy of Analysis Request Sheet for your records.

Please note:

Sample Receiving Staff
Michigan Department of Environmental Quality, Environmental Science & Services Division, Laboratory Section
3350 N MLK Jr Blvd #44, Rm 303
Lansing, MI 48906-2933
Telephone #: 517-335-9800
Telefax #: 517-335-9600

Coolers/Packing containers

- ☐ Please include return shipping labels with sample coolers/containers.
- ☐ All other coolers/containers can be picked up at MDEQ Facility @ 815 Terminal Road, Lansing, MI 48906. For arrangements, please call 517-335-9800 or 517-335-9686 and leave a message.
- ☐ Coolers/containers that are not picked up in a timely manner (2 weeks) will be disposed of or used for sampling purposes.

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

White

LAB WORK ORDER # 407-00290

MATRIX=WATER

SITE CODE NUMBER | SITE NAME: WRS

CIRCLE ONE: 1. NO SITE FUNDING 2. CMI (Non RRD) 3. NPDES (4.) OTHER-list here - Consent order 5. RRD-CLEANUP - State Funded 6. RRD-LUST - Federal 7. RRD-SUPERFUND- Federal

DIVISION: WD | DISTRICT/OFFICE: Cadillac | MDEQ PROJECT MANAGER: Janice Heuer | E-MAIL ADDRESS: heuerj@michigan.gov | PHONE: 231 775 3960 x6203 | ACCEPT HL CODES? (YES) / NO If yes, which parameters?

PRIMARY CONTACT PERSON: Janice Heuer | CONTRACT FIRM NAME (if applicable) | PHONE: 231 775-3960 x6203 | AY: 04 INDEX: 37809 PCA: 42202 PROJECT: 481004 PH:

OVERFLOW LAB (Required for Funded RRD & CMI samples)
1ST CHOICE: | 2ND CHOICE:

E-MAIL ADDRESSES TO SEND ADDITIONAL REPORTS TO:
1.)
2.)

COLLECTED BY: Janice Heuer | PHONE: 231 775-3960 x6203

****** SAFETY INFORMATION REQUIRED ******
SEE BACK OF FORM

LAB USE ONLY		SAMPLE DESCRIPTION	SAMPLE COLLECTED DATE MM/DD/YY	TIME MILITARY	COMMENTS
1	AA 36391	Sample #1	07/26/04	2030	Kinney collected - odor
2	AA ↓ 92	Sample #2	07/27/04	1030	odors
3	AA				Samples Received
4	AA				Warm
5	AA				
6	AA				
7	AA				
8	AA				
9	AA				
10	AA				

ORGANIC		GENERAL CHEMISTRY		INORGANIC	
VOA VOLATILES (8260)		DO Diss Oxygen	1 2 3 4 5 6 7 8 9 10	MA Total Metals	1 2 3 4 5 6 7 8 9 10
Full List	1 2 3 4 5 6 7 8 9 10	GN NO_2 o-Phos	1 2 3 4 5 6 7 8 9 10	MAD Diss-Field Filtered	1 2 3 4 5 6 7 8 9 10
BTEX/MTBE/TMB only	1 2 3 4 5 6 7 8 9 10	Residue SS	1 2 3 4 5 6 7 8 9 10	MD Diss-Lab Filtered	1 2 3 4 5 6 7 8 9 10
		Residue TDS	1 2 3 4 5 6 7 8 9 10	Circle Requested Metal and Corresponding Sample No.	
ON PESTICIDES/PCBS (8081/8082)			1 2 3 4 5 6 7 8 9 10		
Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10	BOD Tot 5 day	1 2 3 4 5 6 7 8 9 10	ICP-MS (200.8/6020) Cd Cr Cu Ni Pb Zn	1 2 3 4 5 6 7 8 9 10
Pesticides only	1 2 3 4 5 6 7 8 9 10	BOD Carb 5 day	1 2 3 4 5 6 7 8 9 10	As Ba Se Ag	1 2 3 4 5 6 7 8 9 10
PCBs only	1 2 3 4 5 6 7 8 9 10	Turbidity	1 2 3 4 5 6 7 8 9 10	Co Mn Sb Sr Tl	1 2 3 4 5 6 7 8 9 10
		CA Chlorophyll	1 2 3 4 5 6 7 8 9 10	Al Be Mo Ti V	1 2 3 4 5 6 7 8 9 10
BNA BASE NEUTRAL & ACIDS (8270)		(GA) (COD)	(1 2) 3 4 5 6 7 8 9 10	ICP (200.7/6010) B Fe Li	1 2 3 4 5 6 7 8 9 10
BNAs	1 2 3 4 5 6 7 8 9 10	TOC	1 2 3 4 5 6 7 8 9 10	Flame AA (200/7000 Series) Ca Mg Na K	1 2 3 4 5 6 7 8 9 10
PNAs only	1 2 3 4 5 6 7 8 9 10	(NO3 + NO2, NH3)	(1 2) 3 4 5 6 7 8 9 10	Hardness	1 2 3 4 5 6 7 8 9 10
BNs only	1 2 3 4 5 6 7 8 9 10	KJEL N, (Tot P)	(1 2) 3 4 5 6 7 8 9 10	Cold Vapor AA (245.1/7470/7471) Hg	1 2 3 4 5 6 7 8 9 10
ACIDs only	1 2 3 4 5 6 7 8 9 10	S Sulfide	1 2 3 4 5 6 7 8 9 10	(MN) pH, Conductance	1 2 3 4 5 6 7 8 9 10
SPECIAL REQUESTS Library Search (Qualitative)		GP Phenolics	1 2 3 4 5 6 7 8 9 10	(Cl, SO_4, Total Alk)	(1 2) 3 4 5 6 7 8 9 10
Volatiles	1 2 3 4 5 6 7 8 9 10	GB Total CN	1 2 3 4 5 6 7 8 9 10	(HCO_3/CO_3)	(1 2) 3 4 5 6 7 8 9 10
Semivolatiles	1 2 3 4 5 6 7 8 9 10	Amenable CN	1 2 3 4 5 6 7 8 9 10	Cr^{6+}	1 2 3 4 5 6 7 8 9 10
FingerPrint	1 2 3 4 5 6 7 8 9 10	GCN Available CN	1 2 3 4 5 6 7 8 9 10	OG Oil & Grease	1 2 3 4 5 6 7 8 9 10

Chain-of-Custody

RELEASED BY / ORGANIZATION	RECEIVED BY / ORGANIZATION	DATE	TIME
Print Name & Organization: Janice Heuer MDEQ - WD Signature: Janice Heuer	Print Name & Organization: Signature:		
Print Name & Organization: Drop / UPS Signature:	Print Name & Organization: D. Scott Record DEQ Signature: [signature]	7/29/04	1155
Print Name & Organization: Signature:	Print Name & Organization: Signature:		

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-9800
FAX: (517) 335-9600

Division: WD
Report to: JANICE HEUER
MDEQ-WD-CADILLAC
CADILLAC DISTRICT OFFICE
120 W CHAPIN STREET, CADILLAC, MI 49601

Total: $158.96

Lab Work Order # : 40700290
Work Site ID : LB040061
Site Name : WRS
Received: 07/29/2004
Reported: 08/30/2004
Collected By: JANICE HEUER

Samples Received :

No:	Sample ID	Sample Description	Matrix:	Collection Date
01	AA36391	SAMPLE #1	WATER	07/26/2004
02	AA36392	SAMPLE #2	WATER	07/27/2004

I certify that the analysis performed by the MDEQ Environmental Laboratory are accurate and that the laboratory tests were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies.

Bob Avery, Laboratory Director

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ENVIRONMENTAL LABORATORY
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Lansing, MI 48909
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FAX: (517) 335-9600

Sample Number AA36391 SAMPLE #1

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	Alkalinity - Bicarbonate	301	mg/L	10		08/26/2004	Calculated	LU
	Alkalinity - Carbonate	ND	mg/L	10		08/26/2004	Calculated	LU
	Alkalinity (as CaCO3)	301	mg/L	20		08/10/2004	310.1	LU
16887006	Chloride	504	mg/L	1	D	08/13/2004	325	LU
	Sulfate	14	mg/L	2		08/13/2004	375.1	LU
	COD	7900	mg/L	5	D	08/20/2004	410	MB
	KN TP - Digestion	Completed				08/17/2004	351.2	DS1
7723-14-0	Total Phosphorus	4.3	mg P/L	0.010	I	08/17/2004	365.4	DS1
7664-41-7	Ammonia	.06	mg N/L	0.01		08/12/2004	350.1	RA
7727-37-9	Nitrate + Nitrite	.04	mg N/L	0.01		08/12/2004	353.2	RA

Sample Number AA36392 SAMPLE #2

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	Alkalinity - Bicarbonate	301	mg/L	10		08/26/2004	Calculated	LU
	Alkalinity - Carbonate	ND	mg/L	10		08/26/2004	Calculated	LU
	Alkalinity (as CaCO3)	301	mg/L	20		08/10/2004	310.1	LU
16887006	Chloride	143	mg/L	1	D	08/13/2004	325	LU
	Sulfate	20	mg/L	2		08/13/2004	375.1	LU
	COD	8000	mg/L	5	D	08/20/2004	410	MB
	KN TP - Digestion	Completed				08/17/2004	351.2	DS1
7723-14-0	Total Phosphorus	4.3	mg P/L	0.010	I	08/17/2004	365.4	DS1
7664-41-7	Ammonia	.11	mg N/L	0.01		08/12/2004	350.1	RA
7727-37-9	Nitrate + Nitrite	.01	mg N/L	0.01		08/12/2004	353.2	RA

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

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Cherry Blossom

Sample Number AA36391 SAMPLE #1

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	Alkalinity - Bicarbonate	301	mg/L	10		08/26/2004	Calculated	LU
	Alkalinity - Carbonate	ND	mg/L	10		08/26/2004	Calculated	LU
	Alkalinity (as CaCO3)	301	mg/L	20		08/10/2004	310.1	LU
16887006	Chloride	504	mg/L	1	D	08/13/2004	325	LU
	Sulfate	14	mg/L	2		08/13/2004	375.1	LU
	COD	7900	mg/L	5	D	08/20/2004	410	MB
	KN TP - Digestion	Completed				08/17/2004	351.2	DSI
7723-14-0	Total Phosphorus	4.3	mg P/L	0.010	I	08/17/2004	365.4	DSI
7664-41-7	Ammonia	.06	mg N/L	0.01		08/12/2004	350.1	RA
7727-37-9	Nitrate + Nitrite	.04	mg N/L	0.01		08/12/2004	353.2	RA

Sample Number AA36392 SAMPLE #2

CAS#	Analyte Name	Result	Unit	RL	Qualifier	Date Tested	Method	Analyst
	Alkalinity - Bicarbonate	301	mg/L	10		08/26/2004	Calculated	LU
	Alkalinity - Carbonate	ND	mg/L	10		08/26/2004	Calculated	LU
	Alkalinity (as CaCO3)	301	mg/L	20		08/10/2004	310.1	LU
16887006	Chloride	143	mg/L	1	D	08/13/2004	325	LU
	Sulfate	20	mg/L	2		08/13/2004	375.1	LU
	COD	8000	mg/L	5	D	08/20/2004	410	MB
	KN TP - Digestion	Completed				08/17/2004	351.2	DSI
7723-14-0	Total Phosphorus	4.3	mg P/L	0.010	I	08/17/2004	365.4	DSI
7664-41-7	Ammonia	.11	mg N/L	0.01		08/12/2004	350.1	RA
7727-37-9	Nitrate + Nitrite	.01	mg N/L	0.01		08/12/2004	353.2	RA

pits filled this year
16 N area
est 10,000 gal/pit discharge

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

Laboratory Contacts
Inorganic Unit Mgr: Sandy Gregg
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian

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Qualifier Code	Qualifier Description
A	Value reported is the mean of two or more determinations.
C	Value calculated from other independent parameters.
D	Analyte value quantified from a dilution(s); reporting limit (RL) raised.
E	Result is estimated due to high recovery of batch QC.
F	Free cyanide was not analyzed due to low level of total cyanide.
G	Result and RL are estimated due to initial calibration standard criteria failure.
H	Recommended laboratory holding time was exceeded.
I	Dilution required due to matrix interference; reporting limit (RL) raised.
J	Analyte was positively identified. Value is an estimate.
JA	Result is estimated due to multiple Aroclors present.
JC	Result is estimated since confirmation analysis did not meet acceptance criteria
JD	Due to severe degradation, specific Aroclor identification is difficult and quantitation is estimated.
K	RL(s) raised due to matrix interferences.
LB	Reported library search compounds are tentative identifications with estimated concentrations.
M	The level of the method preparation blank (MPB) is reported in the qualifier column.
N	Non-homogeneous sample made analysis of sample questionable.
O	Result and RL estimated due to analysis from an open vial.
P	Recommended sample collection/preservation technique not used; reported result(s) is an estimate.
Q	Quantity of sample insufficient to perform analyses requested.
R	Result confirmed by re-extraction and analysis.
S	Supernatant analyzed.
T	Reported value is less than the reporting limit (RL).
V	Value not available due to dilution.
W	Reported value is less than the method detection limit (MDL).
X	Methods 8260 & 624 are used to analyze volatile organics that have boiling points below 200°C. 2-Methylnaphthalene & naphthalene have boiling points above 200°C and are better suited to analysis by methods 8270 or 625 as semivolatile organics.
1	Result(s) and RL(s) are estimated due to low surrogate recovery.
2	Result is estimated due to high surrogate recovery.
3	Result(s) and RL(s) are estimated due to low matrix spike recovery.
4	Result is estimated due to high matrix spike recovery.
5	Result and RL are estimated due to low continuing calibration standard criteria failure.
6	Result is estimated due to high continuing calibration standard criteria failure.
7	Result(s) and RL(s) are estimated due to poor precision.
8	Result(s) and RL(s) are estimated due to low recovery of batch QC.
KR	RL(s) raised due to low sample volume submitted.
KS	RL(s) raised due to low total solids.
KW	RL(s) raised due to light sample weight.
9	Result outside QC acceptance criteria.

CAS# : Chemical Abstract Service Registry Number
RL : Reporting Limit
ND : Not Detected

ug / L : microgram / liter (ppb)
mg / L : milligram / liter (ppm)
ug / Kg : microgram / kilogram (ppb)
mg / Kg : milligram / kilogram (ppm)

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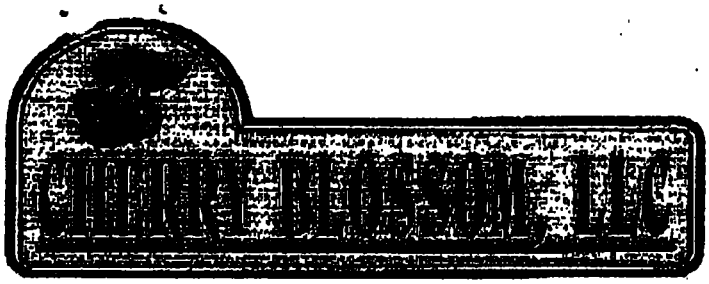
Organic Unit Mgr: Carol Smith
Systems Mgmt Unit: George Krisztian



10190 Munro Road, Williamsburg, MI 49690
(231) 264- 5260
UPSTAIRS FAX (231) 264-9129
DOWNSTAIRS FAX (231) 264-8774

FACSIMILE TRANSMITTAL SHEET

TO: JANICE HEUER FROM: BRIAN SMITH

COMPANY: DATE:

FAX NUMBER: TOTAL NO. OF PAGES INCLUDING COVER

_____ URGENT ___ FOR REVIEW _____ PLEASE COMMENT ___PLEASE REPLY __ PLEASE RECYCLE

NOTES/ COMMENTS

SOS ANALYTICAL

4125 Cedar Run Rd., Suite B
Traverse City, MI 49684
Phone 231-946-6767
Fax 231-946-8741
www.sosanalytical.com

COMPANY:	CHERRY BLOSSOM, L.L.C.	SOS PROJECT NO:	043575 - 1
NAME:		DATE SAMPLED:	7/15/04
PROJECT NO:		TIME SAMPLED:	
WSSN:		SAMPLE MATRIX:	DRINKING WATER
LOCATION:	10190 MUNRO RD	SAMPLE ID:	1ST RO
	WILLIAMSBURG	DATE RECEIVED:	7/16/04
SAMPLED BY:	GREG MOORE/GIL BETZ	TIME RECEIVED:	10:35 AM

from 1st RO unit

EPA 524.2 PURGEABLE ORGANICS

Units=ug/L (PPB) Analyst=RS/VLK Date Extracted= Date Completed= 7/19/04 Prep Method=EPA 5030B

Analyte	Concentration	LOD	Analyte	Concentration	LOD
ACETONE	ND	5.0	1,1-DICHLOROPROPENE	ND	0.5
ACRYONITRILE	ND	5.0	cis-1,3-DICHLOROPROPENE	ND	0.5
ALLYL CHLORIDE	ND	5.0	trans-1,3-DICHLOROPROPENE	ND	0.5
BENZENE	ND	0.5	DIETHYL ETHER	ND	5.0
BROMOBENZENE	ND	0.5	ETHYLBENZENE	ND	0.5
BROMOCHLOROMETHANE	ND	0.5	ETHYL METHACRYLATE	ND	5.0
BROMODICHLOROMETHANE	ND	0.5	HEXACHLOROBUTADIENE	ND	0.5
BROMOFORM	ND	0.5	HEXACHLOROETHANE	ND	5.0
BROMOMETHANE	ND	0.5	2-HEXANONE	ND	5.0
n-BUTYLBENZENE	ND	0.5	IDOMETHANE	ND	0.5
s-BUTYLBENZENE	ND	0.5	ISOPROPYLBENZENE	ND	0.5
JTYLBENZENE	ND	0.5	ISOPROPYLTOLUENE	ND	0.5
ARBON DISULFIDE	ND	0.5	METHYL ACRYLATE	ND	5.0
CARBON TETRACHLORIDE	ND	0.5	METHYL ETHYL KETONE	536	50.0
CHLOROBENZENE	ND	0.5	METHYL-t-BUTYL ETHER	ND	5.0
1-CHLOROBUTANE	ND	0.5	METHYLENE CHLORIDE	ND	5.0
CHLOROFORM	ND	0.5	METHYL METHACRYLATE	ND	5.0
CHLOROETHANE	ND	0.5	MIBK	ND	5.0
CHLOROMETHANE	ND	0.5	2-METHYLNAPHTHALENE	ND	5.0
2-CHLOROTOLUENE	ND	0.5	NAPHTHALENE	ND	2.5
4-CHLOROTOLUENE	ND	0.5	PENTACHLOROETHANE	ND	5.0
DIBROMOCHLOROMETHANE	ND	0.5	n-PROPYLBENZENE	ND	0.5
DIBROMOMETHANE	ND	0.5	STYRENE	ND	0.5
1,2-DIBROMO3CHLOROPROPANE	ND	5.0	1,1,1,2-TETRACHLOROETHANE	ND	0.5
1,2-DIBROMOETHANE	ND	0.5	1,1,2,2-TETRACHLOROETHANE	ND	0.5
1,2-DICHLOROBENZENE	ND	0.5	TETRACHLOROETHENE	ND	0.5
1,3-DICHLOROBENZENE	ND	0.5	TOLUENE	1.8	0.5
1,4-DICHLOROBENZENE	ND	0.5	1,2,3-TRICHLOROBENZENE	ND	0.5
1,4-DICHLORO-2-BUTENE	ND	5.0	1,2,4-TRICHLOROBENZENE	ND	0.5
DICHLORODIFLUOROMETHANE	ND	0.5	1,1,1-TRICHLOROETHANE	ND	0.5
1,1-DICHLOROETHANE	ND	0.5	1,1,2-TRICHLOROETHANE	ND	0.5
1,2-DICHLOROETHANE	ND	0.5	TRICHLOROETHENE	ND	0.5
1,1-DICHLOROETHENE	ND	0.5	TRICHLORFLOUROMETHANE	ND	0.5
cis-1,2-DICHLOROETHENE	ND	0.5	1,2,3-TRICHLOROPROPANE	ND	0.5
trans-1,2-DICHLOROETHENE	ND	0.5	1,2,4-TRIMETHYLBENZENE	1.2	0.5
1,2-DICHLOROPROPANE	ND	0.5	1,3,5-TRIMETHYLBENZENE	ND	0.5
1 3-DICHLOROPROPANE	ND	0.5	VINYL CHLORIDE	ND	0.5
DICHLOROPROPANE	ND	0.5	XYLENE (TOTAL)	1.7	1.5

ND = NOT DETECTED
LOD = LIMIT OF DETECTION

APPROVED BY: Shanna Shea

SHANNA SHEA / LAB MANAGER: R. SIMMERMAN / ORGANIC CHEMIST

2 bottles more

SOS ANALYTICAL, INC. IS CERTIFIED FOR COMPLIANCE MONITORING UNDER THE SAFE DRINKING WATER ACT.

SOS ANALYTICAL

4125 Cedar Run Rd., Suite B
Traverse City, MI 49684
Phone 231-946-6767
Fax 231-946-8741
www.sosanalytical.com

COMPANY: CHERRY BLOSSOM, L.L.C.

NAME:
PROJECT NO:
WSSN:
WELL PERMIT:
TAX ID:
LOCATION: 10190 MUNRO RD

WILLIAMSBURG
MI

COUNTY:
TWP:

SOS PROJECT NO: 043575 - 1
SAMPLED BY: GREG MOORE/GE BLITZ

DATE RECEIVED: 7/16/04
TIME RECEIVED: 10:35 AM
SAMPLE ID: 1ST RO

DATE SAMPLED: 7/15/04
TIME SAMPLED:
SAMPLE MATRIX: DRINKING WATER

INORGANICS

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
CHLORIDE SM4500 Cl-C	44	1	mg/L (PPM)	KMC	7/20/04	250(SMCL)
CYANIDE-TOTAL SM4500 CN-C/E	0.031	0.005	mg/L (PPM)	KMC	7/29/04	0.2
FLUORIDE SM4500-F C	ND	0.2	mg/L (PPM)	KMC	7/19/04	4
NITROGEN, NITRATE - EPA 353.2	ND	0.15	mg/L (PPM)	KMC	7/21/04	10
NITROGEN, NITRITE - EPA 353.2	ND	0.005	mg/L (PPM)	KMC	7/21/04	1
SULFATE SM4500 SO4	8	3	mg/L (PPM)	KMC	7/26/04	250(SMCL)

SM9223 COLIFORM BACTERIA - PRESENCE/ABSENCE

	SAMPLE RESULT	Drinking Water Reg Limit(MCL)
TOTAL COLIFORM BACTERIA	PRESENT	ABSENT
E. coli BACTERIA	ABSENT	ABSENT

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER

SOS ANALYTICAL

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COMPANY: CHERRY BLOSSOM, L.L.C.

NAME:
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LOCATION: 10190 MUNRO RD

WILLIAMSBURG
MI

COUNTY:
TWP:

SOS PROJECT NO: 043575 - 1
SAMPLED BY: GREG MOORE/GE BETZ

DATE RECEIVED: 7/16/04
TIME RECEIVED: 10:35 AM
SAMPLE ID: 1ST RO

DATE SAMPLED: 7/15/04
TIME SAMPLED:
SAMPLE MATRIX: DRINKING WATER

METALS

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Digestion Method	Drinking Water Reg Limit(MCL)
ANTIMONY EPA 200.9 GFAA	ND	0.006	mg/L (PPM)	KJ	7/21/04		0.006
ARSENIC EPA 200.9 GFAA	ND	0.005	mg/L (PPM)	KJ	7/30/04		0.01
BARIUM SM3111 Ba-D FLAA	ND	0.5	mg/L (PPM)	KJ	7/22/04		2
BERYLLIUM EPA 200.9 GFAA	ND	0.001	mg/L (PPM)	KJ	7/19/04		0.004
CADMIUM EPA 200.9 GFAA	ND	0.001	mg/L (PPM)	KJ	7/22/04		0.005
CHROMIUM EPA 200.9 GFAA	ND	0.002	mg/L (PPM)	KJ	8/3/04		0.1
COPPER SM3111 Cu-B FLAA	ND	0.05	mg/L (PPM)	KJ	7/20/04		1.3
COPPER SM3111 Cu-B FLAA	ND	0.05	mg/L (PPM)	KJ	7/20/04		1.3
HARDNESS(CALC) SM2340-B	32	1	mg/L (PPM)	KJ	7/22/04		
IRON SM3111 Fe-B FLAA	0.39	0.05	mg/L (PPM)	KJ	7/27/04		0.3 (SMCL)
LEAD EPA 200.9 GFAA	ND	0.002	mg/L (PPM)	KJ	7/20/04		0.015
MANGANESE SM3111 Mn-B FLAA	ND	0.05	mg/L (PPM)	KJ	7/21/04		0.05 (SMCL)
MERCURY EPA 245.1 CV	ND	0.0005	mg/L (PPM)	KJ	7/28/04	7470	0.002
NICKEL SM3111 Ni-B FLAA	ND	0.05	mg/L (PPM)	KJ	7/19/04		0.1
SELENIUM EPA 200.9 GFAA	0.002	0.001	mg/L (PPM)	DEQ	8/6/04		0.05
SODIUM SM3111 Na-B FLAA	30.8	5.0	mg/L (PPM)	KJ	7/22/04		
THALLIUM EPA 200.9 GFAA	ND	0.002	mg/L (PPM)	KJ	7/20/04		0.002
ZINC SM3111 Zn-B FLAA	ND	0.05	mg/L (PPM)	KJ	7/20/04		5 (SMCL)

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
FLAA = FLAME ATOMIC ABSORPTION
GFAA = GRAPHITE FURNACE ATOMIC ABSORPTION
CV = COLD VAPOR AA ANALYSIS
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
DISS = DISSOLVED

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER

SOS ANALYTICAL

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LOCATION: 10190 MUNRO RD

MI

COUNTY:
TWP:

SOS PROJECT NO: 043576 - 1
SAMPLED BY: GREG MOORE/GE BLTZ

DATE RECEIVED: 7/16/04
TIME RECEIVED: 10:35 AM
SAMPLE ID: 2ND RO

DATE SAMPLED: 7/15/04
TIME SAMPLED:
SAMPLE MATRIX: DRINKING WATER

INORGANICS

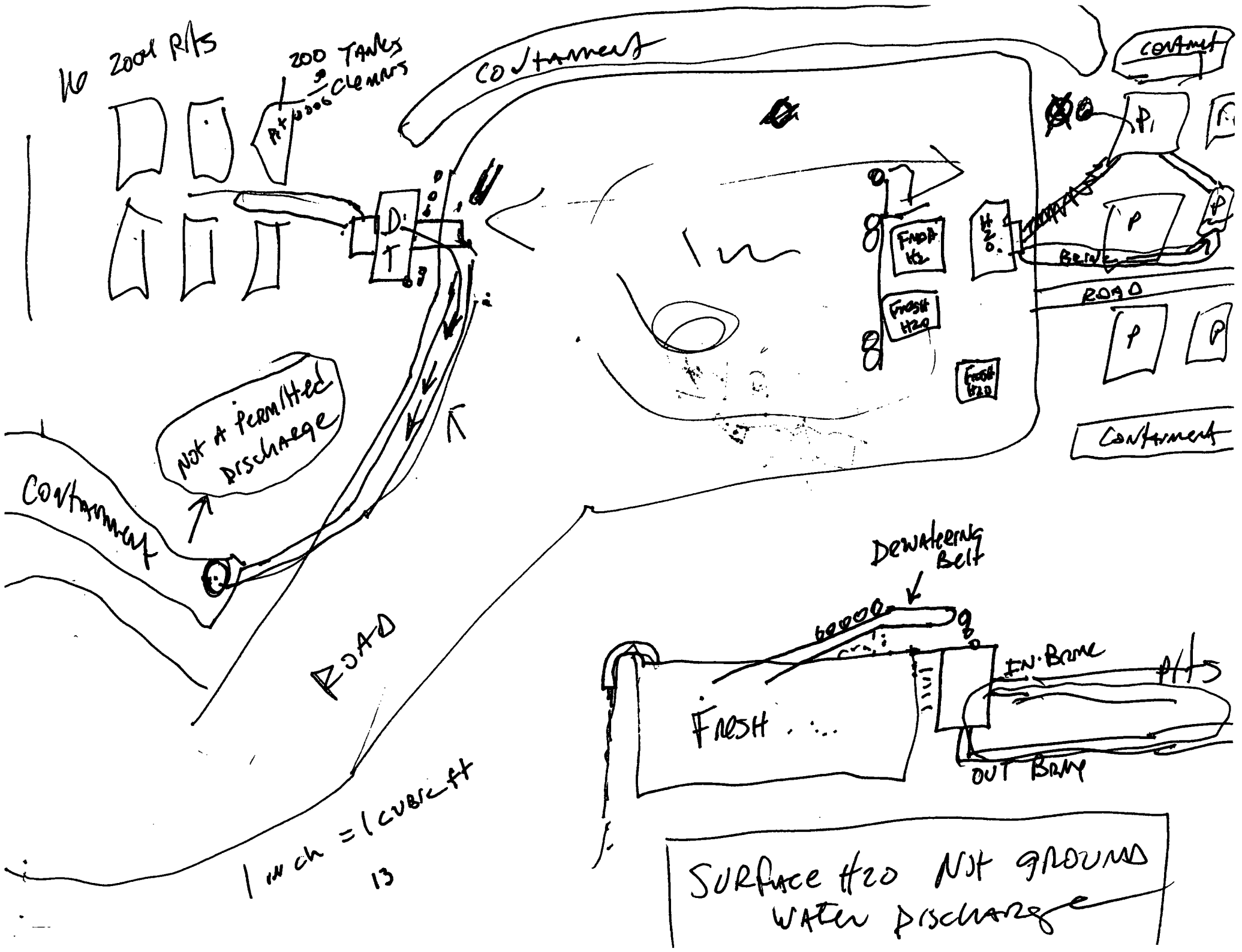
Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
NITROGEN, NITRATE - EPA 353.2	ND	0.15	mg/L (PPM)	KMC	7/21/04	10

SM9223 COLIFORM BACTERIA - PRESENCE/ABSENCE

	SAMPLE RESULT	Drinking Water Reg Limit(MCL)
TOTAL COLIFORM BACTERIA	PRESENT	ABSENT
E. coli BACTERIA	ABSENT	ABSENT

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER


200 TANKS
CONTAINMENT
D
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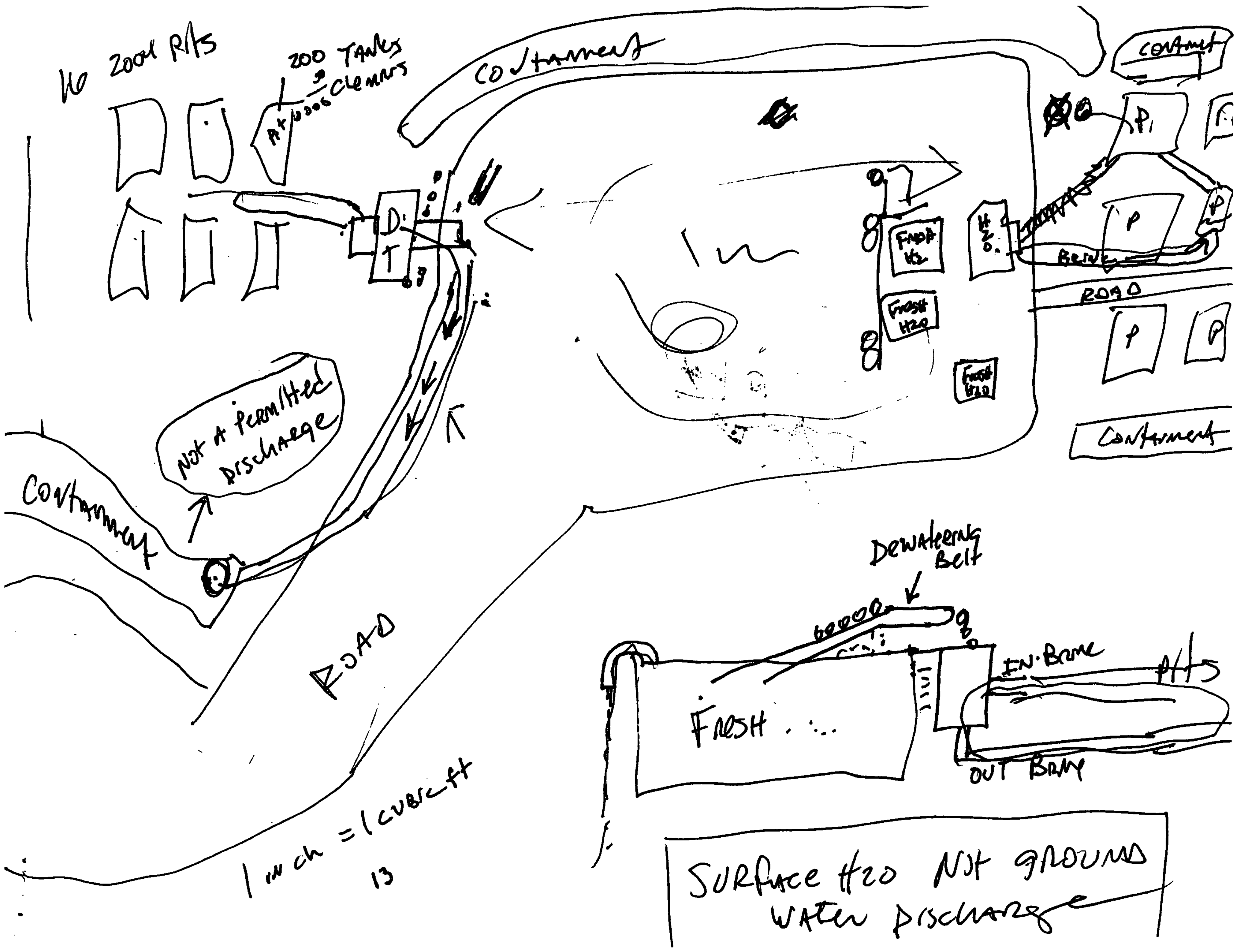
NOT A PERMITTED DISCHARGE
CONTAINMENT
ROAD
1 INCH = 1 CUBIC FT
13
DEWATERING BELT
FRESH
IN BRINE
OUT BRINE
SURFACE H2O NOT GROUND WATER DISCHARGE



200 TANKS
CONTAINMENT
D
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NOT A PERMITTED DISCHARGE
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ROAD
1 inch = 1 cubic ft
13
FRESH H2O
FRESH H2O
FRESH H2O
H2O
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CONTAINMENT
CONTAINMENT
DEWATERING BELT
IN BRINE
R/TS
FRESH
OUT BRINE
SURFACE H2O NOT GROUND WATER DISCHARGE

SOS ANALYTICAL

4125 Cedar Run Rd., Suite 8
Traverse City, MI 49684
Phone 231-946-6767
Fax 231-946-8741
www.sosanalytical.com

COMPANY: CHERRY BLOSSOM, L.L.C.

NAME:
PROJECT NO:
WSSN:
WELL PERMIT:
TAX ID:
LOCATION:

RECEIVED
AUG 0 6 2004
BY:.....

WILLIAMSBURG
MI

COUNTY:
TWP:

SOS PROJECT NO: 043868
SAMPLED BY: BRIAN SMITH/CHERRYBLOSSOM
DATE SAMPLED: 7/27/04
TIME SAMPLED: 1:00 PM
SAMPLE MATRIX: GRAB/WATER
DATE RECEIVED: 7/27/04
TIME RECEIVED: 4:05 PM

INORGANICS/WET CHEMISTRY/METALS

No:	Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
SAMPLE ID: EFFLUENT PIPE WATER							
1	BOD 5-DAY EPA 405.1	4,300	4,000	mg/L (PPM)	KMC	8/2/04	
1	CHLORIDE EPA 325.2	151	10	mg/L (PPM)	KMC	8/3/04	
1	PHOSPHORUS-TOTAL EPA 365.4M	2.16	0.15	mg/L (PPM)	KMC	7/29/04	
1	SODIUM - EPA 273.1	65.6	5.0	mg/L (PPM)	KJ	7/29/04	
1	SULFATE SM4500 SO4	ND	20	mg/L (PPM)	KMC	7/29/04	
SAMPLE ID: CONTAINMENT POND (MIDDLE)							
2	BOD 5-DAY EPA 405.1	< 2,000	2,000	mg/L (PPM)	KMC	8/2/04	
2	CHLORIDE EPA 325.2	157	10	mg/L (PPM)	KMC	8/3/04	
2	PHOSPHORUS-TOTAL EPA 365.4M	2.97	0.15	mg/L (PPM)	KMC	7/29/04	
2	SODIUM - EPA 273.1	49.7	5.0	mg/L (PPM)	KJ	7/29/04	
2	SULFATE SM4500 SO4	ND	20	mg/L (PPM)	KMC	7/29/04	

Taken by Brian Smith at point where water was backing up from the stormwater drain overflow (see sketch)

ND = NOT DETECTED
LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: Shanna Shea
SHANNA SHEA
LAB MANAGER

GE Infrastructure
Water & Process Technologies

WATER ANALYSIS REPORT

4000067064
CHERRY BLOSSOM LLC
10190 MUNRO RD
Williamsburg, MI
UNITED STATES 49690

Sampled: 16-JUL-2004
Reported: 22-JUL-2004
Field Rep: Moore, Gregory T.
91001190

	1ST RO	2ND RO	RAW WATER
	00719283	00719284	00719285
pH	5.6	5.9	4.4
Specific Conductance, at 25°C, µmhos	314	16.8	3430
Alkalinity, "P" as $CaCO_3$, ppm	0	0	0
Alkalinity, "M" as $CaCO_3$, ppm	47	3.1	53
Sulfur, Total, as SO_4, ppm	15.8	< 5	573
Chloride, as Cl, ppm	39	< 0.5	641
Hardness, Total, as $CaCO_3$, ppm	36	< 1	1170
Calcium Hardness, Total, as $CaCO_3$, ppm	31	< 0.5	1010
Magnesium Hardness, Total, as $CaCO_3$, ppm	5.0	< 0.5	152
Barium, Total, as Ba, ppm	< 0.01	< 0.01	< 0.1
Strontium, Total, as Sr, ppm	0.12	< 0.01	3.9
Copper, Total, as Cu, ppm	< 0.05	< 0.05	0.68
Iron, Total, as Fe, ppm	0.41	< 0.05	21
Sodium, as Na, ppm	37	1.3	377
Potassium, as K, ppm	13.8	< 0.5	96
Zinc, Total, as Zn, ppm	< 0.01	< 0.01	0.27

Est 30,000 gpd @ 4 days/wk

GE imagination at work

GE Infrastructure
Water & Process Technologies

WATER ANALYSIS REPORT

4000067064
CHERRY BLOSSOM LLC
10190 MUNRO RD
Williamsburg, MI
UNITED STATES 49690

Sampled: 16-JUL-2004
Reported: 22-JUL-2004
Field Rep: Moore, Gregory T.
91001190

	1ST RO	2ND RO	RAW WATER
	00719283	00719284	00719285
Aluminum, Total, as Al, ppm	< 0.1	< 0.1	< 1
Manganese, Total, as Mn, ppm	< 0.01	< 0.01	0.27
Nitrite, as NO_2, ppm	< 0.5	< 0.5	< 5
Molybdenum, as Mo, ppm	< 0.06	< 0.06	< 0.6
Nitrate, as NO_3, ppm	< 1	< 1	< 10
Phosphate, Total, as PO_4, ppm	< 0.4	< 0.4	13.3
Phosphate, Total Inorganic, as PO_4, ppm	< 0.2	< 0.2	13.3
Phosphate, Ortho-, as PO_4, ppm	< 0.2	< 0.2	I
Phosphate, Filtered Ortho-, as PO_4, ppm			0.4
Silica, Total, as SiO_2, ppm	0.6	< 0.5	20
Solids, Total Suspended mg/l	A	A	A
Solids, Total Dissolved mg/l, at 105°\tab	A	A	A
Fluoride, as F, ppm	< 0.4	< 0.4	< 0.4
Arsenic, Total, as As, ppm	< 0.1	< 0.1	< 1
Beryllium, as Be, ppm	< 0.01	< 0.01	< 0.1
Boron, as B, ppm	0.05	< 0.05	< 0.5

GE Infrastructure
Water & Process Technologies

WATER ANALYSIS REPORT

4000067064
CHERRY BLOSSOM LLC
10190 MUNRO RD
Williamsburg, MI
UNITED STATES 49690

Sampled: 16-JUL-2004
Reported: 22-JUL-2004
Field Rep: Moore, Gregory T.
91001190

	1ST RO	2ND RO	RAW WATER
	00719283	00719284	00719285
Cadmium, as Cd, ppm	< 0.01	< 0.01	< 0.1
Chromium, Total, as Cr, ppm	< 0.03	< 0.03	< 0.3
Cobalt, Total, as Co, ppm	< 0.01	< 0.01	< 0.1
Lead, Total, as Pb, ppm	< 0.05	< 0.05	< 0.5
Nickel, Total, as Ni, ppm	< 0.01	< 0.01	< 0.1
Selenium, Total, as Se, ppm	< 0.1	< 0.1	< 1
Tin, Total, as Sn, ppm	< 0.05	< 0.05	< 0.5
Titanium, Total, as Ti, ppm	< 0.01	< 0.01	< 0.1
Vanadium, Total, as V, ppm	< 0.01	< 0.01	< 0.1
Thallium, Total, as Tl, ppm	0.1	< 0.1	< 1
Carbon, Total Organic, as C, ppm	1110	49	5410
Turbidity, NTU	7.1	0.7	558

WATER ANALYSIS REPORT

4000067064
CHERRY BLOSSOM LLC
10190 MUNRO RD
Williamsburg, MI
UNITED STATES 49690

Sampled: 16-JUL-2004
Reported: 22-JUL-2004
Field Rep: Moore, Gregory T.
91001190

Result Legend

A - This test was aborted for cause. More detail is provided below.
I - A chemical or physical interference prevented the labs ability to perform this test.

Comments

Sample Name: 1ST RO Lab ID: 00719283

TDS and TSS are no longer routinely required for Grids 40,41 and 42. If you have any questions, please contact the laboratory.

Sample Name: 2ND RO Lab ID: 00719284

TDS and TSS are no longer routinely required for Grids 40,41 and 42. If you have any questions, please contact the laboratory.

Sample Name: RAW WATER Lab ID: 00719285

TDS and TSS are no longer routinely required for Grids 40,41 and 42. If you have any questions, please contact the laboratory.

G.T. 10

OMI

606 FRANKLIN ST., TRAVERSE CITY, MI 49686
PHONE (231) 922-4922 FAX (231) 922-8170

FACSIMILE TRANSMITTAL

To:	Janice	Fax. No.:	(231) 775-1511
Copy:		Fax. No.:	
From:	Liz Hart (OMI)	Date:	12-15-05
		Pages:	2 (Including cover sheet)

RE:

Comments: WRS November Results 2005

OPERATIONS MANAGEMENT INTERNATIONAL
TRAVERSE CITY WASTEWATER TREATMENT PLANT

ANALYTICAL LABORATORY REPORT

CLIENT:DEQ REPORT DATE: 12-15-05

Sample ID	Sample Date	Analysis Date	Analysis	Units	Result
WRS	11-10-05	11-11-05	BOD	Mg/L	6,534
WRS	11-10-05	11-15-05	Chloride	Mg/L	1,050

Signature, Lab Analyst

SOS ANALYTICAL

4125 Cedar Run Road, Suite B
Traverse City, MI 49684
voice: (231) 946-6767
fax: (231) 946-8741

SOSanalytical.com

COMPANY:	WILLIAMSBURG R & S	**SOS PROJECT NO:**	023825 - 1
		SAMPLED BY::	TIM GATES/ISE
NAME:			
PROJECT NO:	02399084-03E	**DATE RECEIVED:**	10/31/02
WSSN:		**TIME RECEIVED:**	11:05 AM
WELL PERMIT:		**SAMPLE ID:**	MUNRO ROAD OUTFALL
TAX ID:			
LOCATION:	MUNRO RD.	**DATE SAMPLED:**	10/31/02
		TIME SAMPLED:	
	WILLIAMSBURG MI	**SAMPLE MATRIX:**	WATER
COUNTY:			
TWP:			

INORGANICS/WET CHEMISTRY

Analysis	Concentration	LOD	Units	Analyst	Date Completed	Drinking Water Reg Limit(MCL)
BOD 5-DAY EPA 405.1	<200	200	mg/L (PPM)	KMC	11/6/02	
CHLORIDE EPA 325.2	3	1	mg/L (PPM)	KMC	11/5/02	
PHOSPHORUS-TOTAL EPA 365.4M	ND	0.25	mg/L (PPM)	KMC	10/31/02	
SODIUM - EPA 273.1	3.05	0.5	mg/L (PPM)	KJ	11/4/02	

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LOD = LIMIT OF DETECTION
SMCL = FEDERAL NON-ENFORCEABLE LIMIT
MCL = MAXIMUM CONTAMINANT LEVEL
s.u. = STANDARD pH UNITS REPORTED AT 25 C
DISS = DISSOLVED

APPROVED BY: _____
SHANNA SHEA
LAB MANAGER

Williamsburg Receiving - G.T.

COPY

Phone 231.773-5998
Toll-free 800.733-5998
Fax 231.773-6537

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673
traceanalytical@mad.scientist.com

TRACE

Assurance
Accuracy
Accountability

RECEIVED
AUG - 2 2002
WMD-CADILLAC

Post-it® Fax Note 7671 | Date 1/8/03 | # of pages ▶ 2
To J. Heuer | From C. McFarlan
Co./Dept. DEQ - Water Division | Co. DEQ - WHMD
Phone # 231-775-3960 X6203 | Phone # 517-373-8387
Fax # 231-775-1511 | Fax # 517-373-4797

MDEQ Project/Site Name: Williamsburg Receiving
MDEQ Manager: Janice Heuer
District: Cadillac
Authorized/Samples Received: 07/10/02
Date Report Issued: 07/22/02
Report Issued To: Janice Heuer
Copy of Report Issued To: NA
AY:
Index: 33820
PCA: 47004
Project/Phase: 470791
Site ID:

Trace Invoice Number: 38983
Invoice Date: 07/31/02
Due Date: 08/30/02
Trace Project ID: CG093
Trace Employer Tax ID #: 38-2811044
Contract Number: Y80243

Amount This Invoice: $220.00

RECEIVED
JAN 21 2003
WHMD - CADILLAC

REMIT TO: Trace Analytical Laboratories, Inc.
Attn: Accounts Receivable
2241 Black Creek Road
Muskegon, MI 49444
(231) 773-5998

Questions regarding invoice detail: Billing, Ext. 222
Questions regarding payment: Accounts Receivable, Ext. 240

Invoice Number must be referenced with payment to ensure proper credit. If not paid within thirty (30) days this invoice shall be subject to 1 1/2 percent (1.5%) per month service charge effective as of the date of delivery. In the event it is necessary to commence collection proceedings buyer shall pay all collection costs incurred including reasonable attorney's fees.

INDEX 33820
PCA PROJECT 470791 CB
REC'D/APPROVED

(47004) CB

33820
47004
470791-00
6125
962-22
7615000215 8

Carole Bunner 8142

2382811044
001

WARRANT #
2151069768/29/02

WASTE MANAGEMENT DIVISION

AUG 0 8 2002

phone 231.773.5498
toll-free 800.733.5998
fax 231.773.6537

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673
traceanalytical@mad.scientist.com

TRACE

Assurance
Accuracy
Accountability

INVOICE SUMMARY # 38983

Client #	Lab #	Matrix	Task ID	Task	Cost Each	Cost Per Sample
Upper	CG093-01	Water	105	BOD	20.00	
			108	Chloride	10.00	
			141	Sulfate	13.00	
			129	Ammonia	20.00	
			126	Nitrate	10.00	
			125	Nitrite	10.00	
			136	Phosphorus	15.00	
			15	ICP/Sodium	7.00	
			6	Microwave Digestion/Metals	5.00	110.00
Lower	CG093-02	Water	105	BOD	20.00	
			108	Chloride	10.00	
			141	Sulfate	13.00	
			129	Ammonia	20.00	
			126	Nitrate	10.00	
			125	Nitrite	10.00	
			136	Phosphorus	15.00	
			15	ICP/Sodium	7.00	
			6	Microwave Digestion/Metals	5.00	110.00

Amount This Invoice: $220.00